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Unasylva

An International Review of Forestry and Forest Products

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INTRODUCTION

International meetings concerned with forestry have on many occasions urged FAO to undertake a general survey of forest co-operatives.

This issue of *Unasylva* appears in answer to that request. The paper was not intended to furnish a guide to countries which, having no such organizations for mutual help, might wish to set them up. It was conceived as an attempt to assess the value and effectiveness of co-operatives as an instrument in the application of national forest policies.

Given this approach, it soon became clear that the survey could not be limited to co-operatives alone — although these must have pride of place — but would have to cover all forms of forestry associations. Certain associations, as will be seen, greatly influence not only the application but even the formulation of forest policies. It is in order to exemplify this that the writer has at times dwelt somewhat at length upon details of the working and activities of such organizations. In addition, it is sometimes very difficult to draw a clear dividing line between association and co-operative. Finally, associations and co-operatives concerned strictly with forestry are not the only ones to influence the development and application of forest policies. While the paper has not sought to go deeply into this matter, it was necessary to mention associations with more general aims, and also industrial and trade associations.

Acknowledgment is due to many who contributed to the preparation of this survey. Whenever FAO requested information, forest services readily furnished all details that might be of use. Special thanks are due to Zentralforstdirektor Dr. S. Duschek, who prepared a valuable report on Central European forest co-operatives; to Professor R. Nagata and Assistant Professors S. Surda and T. Arizizu of Tokyo University, whose account of Japanese co-operatives clarified the complexity of the organization and working operation of bodies in that country; and, lastly, to Länsjägmastere R. Hjorth, who provided a detailed survey of forest co-operatives in northern Europe.

It must be pointed out that the subject dealt with is developing rapidly. Especially is there rapid change and progress in regard to forest co-operatives. New associations are formed, others merge or are absorbed, some disappear or reappear as companies governed by other rules and with other aims. Hence the reader must make allowances if the survey does not adequately cover all the most recent developments.

Cover photograph: *In northern Sweden Forest Cooperatives purchase equipment and machines which would be too expensive for individual owners to invest in. For instance, this scarifying machine to bare the mineral soil and so help natural regeneration to become established, is loaned to a forest owner, the cooperative providing the personnel to operate and maintain the equipment.*

By courtesy Svenska Skogsvardsföreningen, Stockholm.

Left. *Owners of a small farm woodlot in central Finland plant out seedlings obtained from their local co-operative.*

By courtesy of E. S. Paatero.

Below. *The technical training of forest workers is one of the more important functions of the Swiss Forestry Association. Here woodsmen from a village in Switzerland are given a demonstration of correct ways of sharpening a crosscut saw.*

By courtesy of H. Winkelmann.

Forestry Associations

by T. François
Chief, Forest Policy Branch, FAO Forestry Division [1]

I. GENERAL CONSIDERATIONS

In the early days of history, forests were generally regarded as a no-man's land.

Primitive peoples did not countenance forests being appropriated by individuals, and this early feeling that the forest — and in general all uncultivated land — is common property, has been retained by many of the diverse civilizations which have since evolved. States, embracing all local communities, have thus tended to regard themselves as the owners of such lands. Under the feudal system, ownership of extensive areas of forest land in turn devolved on individuals and great families, and some such huge forest estates are still in existence today. The whole system of State-owned forests or of huge private estates was, however, mitigated by the common forest rights enjoyed by the peoples living on the forest borders.

Upon the dissolution of the feudal system, those who enjoyed common forest rights naturally became owners of at least a part of the big estates. In some areas, collective use became translated into collective ownership; in others, the holdings were divided into private domains. In the latter case, the pattern of forest ownership was decisively influenced by the laws and customs relating to inheritance. Where these decreed or favored the sharing of an estate among all the heirs, the forest holdings of individuals became continually smaller with successive generations. Also, individual ownership often extended not over a single compact holding but over a large number of scattered plots, frequently lying far apart from each other.

In more recently settled countries, individual forest smallholdings may have arisen in a different way. Although big trade enterprises were able, in certain cases, to secure ownership of vast wooded tracts, individual settlers tended to leave undisturbed the forest on the less cultivable parts of the land assigned to them, so creating isolated woodlands. In the aggregate, these relatively small areas often form a considerable proportion of a nation's forests.

Disadvantages of the fragmentation of forest lands

The fact that a forest tract is large, whether owned by the State, by a community or by a private person, does not in itself afford any guarantee that the forest is well managed. At the other extreme there is no reason why a small forest should not be carefully and intelligently maintained. The very smallness of its size, however, and the chance that its owner is of limited means, present an obstacle to good management. The deterrents are so great that in some countries, especially in Mediterranean Europe, fragmentation of the forest almost inevitably entails its destruction. At best, it is supplanted by trees commonly grown in association with agriculture, or by very open stands where timber production is merely accessory to the main purpose of grazing or the gathering of fruit or foliage.

But why should the small forest tend to be badly managed? The reasons are many. The chief is that the owner lets the forest go untended because it offers a poor financial return at long intervals. Yet this drawback can be avoided. There are certain kinds of treatment that will furnish a yield, if not yearly, at least at fairly short and regular intervals, even from a small forest. This, it is true, is not always possible, but all too often the owner, being technically ignorant, is quite unaware of what he could really get from his forest. One can hardly blame him, for he has other things to do.

What sort of person, then, is this owner? Two typical cases come to mind. In the first, he is a farmer, a part of whose farm is wooded. If the financial return from his woodland is a negligible fraction of his income, he has little inclination to give much attention to the forest, even though he may quite appreciate its advantages: wood for fuel, and sometimes even for building; a grazing-area too often abused; a source of litter and humus — as often abused — for his stalls and his fields. In the second case he is someone who, by purchase, chance inheritance or division of property, becomes the owner of a tract of forest. Perhaps living elsewhere and having no "sympathy" with the forest, he may think of it as an investment or a standby for lean times, but not as a regular source of income.

In either case, the fact that the owner of the small forest spares little thought for his forest until, rightly or wrongly, he decides to fell trees, puts him in a very weak position for selling them. Often he gets a comparatively small price for them. While it is true that piecemeal extraction of forest products is often unprofitable, this is not necessarily always the case: the small privately-owned woodland generally is, or could

[1] Paper translated from an original French text.

be, more accessible than the more extensive forest tract, for it usually lies nearer to roads and centers of population. In addition, it is often on more fertile soils and should give a proportionately higher production.

In many countries, if the small forest owner lacks technical knowledge, he can, theoretically, use the services of a professional forester. But the smallness of his holding does not justify his employing a full-time expert himself; and the cost of employing even a part-time forester would have to be set against any income his forest is capable of yielding. The case is the same if he wanted to make an outlay for forest improvement or for building up the forest capital. Particularly it is so when it is proposed to replant a cut-over area where for any reason natural regeneration is impossible; or when it is a question of planting to trees land no longer profitable to use for agricultural crops because of changed economic conditions in the area or in the family owning the land. Such operations are costly, and the expected profit, however large, will only come in the long-term.

Unless, therefore, the owner has some definite stimulus, it is most unlikely that he will do anything with his land. Maybe the forest will establish — or re-establish — itself, but it may well be of poor quality or may take a very long time to form. Many other factors may lead the private owner to neglect the upkeep or the establishment of a forest. In many countries, for instance, forest-grazing is freely allowed, and the animals, if not properly controlled, will seriously damage or destroy any natural or artificial tree regeneration.

There can, however, be too much generalization, and it has already been sufficiently stressed that the chief cause of the poor yield from small forests is indifference on the part of the owner. There are, however, instances where the yields from farm-forests make up the major part of a farmer's income. This holds good generally in Finland, often in Norway and Sweden, and sometimes in other heavily wooded areas like the French Landes. Under these circumstances, where the monetary return from the forest falls short of what could be obtained, failure cannot be attributed to the owner's lack of interest, but rather to some other factors that have been mentioned: the owner's lack of technical knowledge, the difficulty he finds in marketing small lots of timber, his shortage of capital for improvements or replanting. In addition, he may have to overcut or fell immature trees to meet immediate needs for fairly big sums to meet death duties or to buy urgently required farm machinery.

Remedying the small-forest situation

The situation as it is can be remedied in various ways. In certain cases it is possible to regroup scattered private forest-plots by exchange or purchase so as to constitute larger and more easily managed units. This manner of consolidation has often proved successful — in Switzerland, for example. But it is difficult to make a successful forest manager out of a smallholder with a few hectares, even by regrouping into one unit the equivalent of several originally scattered plots.

Another solution is direct State help in the form of subsidies in cash or kind or technical aid, or indirect, in the shape of taxation relief or market protection.

But the course calculated to rouse the small forest owner — giving relief to his isolation, to his technical shortcomings, and to the difficulties inherent in the smallness of his holding — undoubtedly lies in his associating in some formal way with other forest-owners who are similarly placed.

Associations of this sort may take the most varied forms, which are examined in the following pages where experience in many countries is also related. The information so given may be useful to those whose task it is to direct national forest policies, and who find themselves up against the problem of developing small private forests to full efficiency.

There are, first, two other points on which to comment.

Areas involved

It is often felt that private forests and their distribution in small plots are the concern of relatively few countries of the world. One might question therefore the need for any concentrated attention to the problems they present if one did not appreciate that those "few countries" were situated in world regions where forest production is now among the highest and already has a considerable economic and social importance.

Table 1, extracted from *World Forest Resources*, (FAO, March 1955) summarizes the situation in regard to those countries most frequently mentioned in the present paper, and it shows the considerable extent of private forest, even in some regions where forestry is little developed.

Table 1 does not show the whole picture, for it gives no indication of the fragmentation of private forests. Although the average size of such forests varies considerably from country to country, in almost all highly-developed countries with a considerable area of private forest, fragmentation is very marked.

Out of Norway's 7,500,000 hectares of forest, 5.3 million hectares, in round figures (excluding forests owned by commercial companies and corporations) are privately owned; of these 3.6 million hectares are farm forests with an average area of 27.3 hectares, but a quarter of the nearly 132,000 woodland-owners possess less than 2.5 hectares of forest, and 60 percent less than 10 hectares.

In Sweden, commercial concerns own about 25 percent of the private forests, and the area of farm-forests seems to be appreciably larger than in Norway. In Finland, where almost all private forests are farm-forests, the average private forest is about 34 hectares in extent. Out of 140 million hectares of commercially-exploitable

TABLE 1 - CLASSIFICATION OF ACCESSIBLE FORESTS BY OWNERSHIP

Country	Forest area		Area by ownership				Private forests as percentage of accessible forests
	Total	Accessible forest	State forests	Communal forests	Forests owned by institutions	Private forests	
Europe	*In thousands of hectares*						*Percent*
Austria	3 139	3 139	471	292	446	1 930	61
Denmark	438	438	122	16	26	274	63
Finland	21 660	20 700	7 100	320	120	13 160	64
France	11 407	11 407	1 634	2 473	1	7 299	64
Western Germany	6 732	6 732	2 104	1 499	330	2 799	42
Italy	5 648	5 648	146	1 424	—	4 078	72
Netherlands	250	250	38	37	13	162	65
Portugal	2 467	2 467	100	—	—	2 367	96
Sweden	22 980	22 980	4 580	750	390	17 260	75
Switzerland	950	850	40	550	10	250	29
United Kingdom	1 661	1 661	383	—	—	1 178	75
North and Central America							
Canada	341 963	130 168	107 719	—	—	22 449	17
Guatemala	5 450	2 250	500	—	—	1 750	78
Mexico	25 856	24 563	3 500	11 372	—	10 984	42
United States	252 530	191 830	45 330	6 880	—	139 620	73
South America							
Brazil	480 195	120 048	72 029	. . . . .		48 019	40
Chile	16 360	6 895	2 111	—	—	4 784	69
Paraguay	20 906	6 272	439	—	—	5 833	93
Asia							
India	70 979	48 930	39 959	—	—	9 171	19
Japan	22 617	21 780	6 686	3 057	664	11 373	52

private forest in the United States, a considerable area is owned by commercial interests or big estate owners, but 55 million hectares are shared among over 3 million farmers. The average size of forest farms is about 17 hectares, and while the average for all private forests together amounts to 32 hectares, only 1 percent of the total number of owners possess more than 200 hectares each.

The fragmentation of forest land is, however, much more intensified in other countries. In Western Germany, out of 693,235 forests of less than 100 hectares, 323,136 are less than 1 hectare in area (their average area being less than 40 ares). In France there were, in 1945, 2,359,000 hectares of private forests made up of woodlands less than 10 hectares in extent, often subdivided into numerous scattered parcels, belonging to 1,445,730 owners, out of a total of 1,528,707. Of the forests less than 10 hectares in extent, the average area was 1.5 hectares. Finally, in Japan, privately-owned forest land is distributed among somewhat more than 5 million proprietors, of whom 73 percent or 3,634,000 own less than one hectare.

On a world count, the total area of woodlands of less than 1 hectare each is only 1,740,000 hectares, or 15 percent of the total area of private forest; the average area of these small holdings is less than 50 ares. The number of persons owning more than 20 hectares each is scarcely more than 1 percent of the total number of private owners recorded. But the total area of all private forests is just over one-third of the total world forested area.

The situation of the European Mediterranean countries is somewhat peculiar. Spain offers a typical case. The statistics of this country class as " forest " all the mountain rangelands, closely associated with the forest, and all scrub and heathlands on the national territory. These *montes* amount to somewhat more than 25 million hectares in area. Of this total, about 16,800,000 hectares are privately owned, the average holding having the comparatively large size of 16 hectares. It should be noted, however, that less than 45 percent of this total area is covered by fairly open mature stands composed largely of evergreen oaks, cork-oaks, sweet chestnut, and poplar and eucalyptus plantations; while more than 55 percent consists of scrub, grazing-land, alfalfa and other rotation crops.

The figures cited above are thought-provoking. Leaving aside Eastern Europe and the expanse of the Soviet Union's Asiatic forest-land and that of China, it may be said that, in the temperate zone of the Northern hemisphere (i.e. in those parts of the world where timber-production is highest), at least 50 percent of production capacity is in the hands of private owners. This figure would loom much larger if Canada had not retained almost all forest-land under public ownership (although the farm forest problem has to be faced there as well). Moreover at least half of this area of privately-owned forest land is distributed among small

owners of whom it could be said that, on the whole, they have practically no technical knowledge and, particularly, no financial resources to enable them to derive full profit from the productive capacity of their forests.

Economic and social issues involved

The second comment to be made is that the existant pattern of ownership necessarily circumscribes any forest policy that a government may contemplate. This is especially so with the "farm-forest," strictly bound up with agricultural land tenure. The little farmer on whom ultimately depends the very life, if not of each nation individually, at least of the world as a whole, needs wood for his own use. He expects his farm-forest to furnish him with fuel, with fencing, with the small timber that he requires and possibly, too, with constructional timber for the upkeep and extension of his farm-buildings. The primary aim of forestry in such forests must, therefore, be the satisfaction of the farmer's needs; and this may have nothing in common with the kind of forestry aimed at getting the best from the forest soil in the interest of a well-planned national forest policy.

The influence exerted in this respect by the form of ownership must not, however, be overrated. Theoretically, a State which was or could be sole owner of the forests on national territory might well invoke a forest policy completely sacrificing local needs to the needs and activities of the country as a whole. In practice, however, this would be impossible since owing to the very difficulty of transporting over long distances primary forest products of low initial value, the populations near to the forest must inevitably benefit so far as timber needs are concerned, from the advantage of their location.

On the other hand, the farmer may no longer find it worth while contemplating procuring his timber needs from his own woodlands when improved communications enable him to satisfy his requirements elsewhere, perhaps more cheaply and without giving up valuable working hours to procure them. For instance, when coal or electricity furnish him with cheaper heating, he should need no persuasion to realize the advantage of transforming the coppice which once furnished his firewood into a high forest.

However, generally speaking, the small privately-owned forest — especially the farm-forest — is still looked upon as the recognized purveyor of local timber requirements. This is especially so in mountainous country and other areas difficult of access. So, as has been said, limitations are imposed upon any national policies relating to such forests, especially to plans for remedying their low productivity.

II. TOTAL MERGER OF MEMBERS' INTERESTS

The low productivity of the small private forest is due to:

(*a*) fragmentation;
(*b*) the scanty technical and financial means at the disposal of the owners.

The best method of improving production is, therefore, that of merging completely — within a homogeneous area, naturally — all the forest lands belonging to smallholders, the interests of the owners being indissolubly bound by a permanent contract. With this fusion of interests, the forests can be managed as one large unit. When pooled and applied to this larger unit capable of giving a profitable return, the owners' financial resources will be more effective; even the owners' deficiency in technical knowledge can be remedied when there are means for calling in one or several professional foresters.

This solution has, in numerous cases, already been brought about simply by the changes and chances of historical evolution — an evolution responsible for the community forests found in many countries.

Community forests

Whatever system of forest ownership be recognized by State laws in countries where backward populations are still living, it is probable that, in most cases, the indigenous people regard recognized stretches of forest as belonging to a local community, if not precisely its property, at least as an area where that community holds the exclusive rights to hunting, gathering fruits, shifting cultivation, and so on. Economically weak, these communities have retained the notion of the forest as common property where all may gain their livelihood.

In Europe, the splitting up of the great feudal estates led to a variety of forms of forest ownership. Although there was a decided tendency in many periods to share out forest property — as in the case of other goods and chattels — between members of a community, yet the community-owned forest has remained extant in numerous regions. It is difficult to draw any conclusions from their present distribution because their formation is due at least as much to political as to physical and economic circumstances. They do not figure largely in Nordic countries: 40,000 hectares in Norway, 1,250,000 hectares in Sweden, 16,000 hectares (out of a total of about 438,000 hectares of forest) in Denmark. They are, on the contrary, numerous in mountainous regions. There are 18,000 such forests in Spain, with a total area considerably more than 6 million hectares (here, again, this applies to *montes*, not necessarily genuine forest). In France, their total area is over 3 million hectares; in Italy about 1,300,000 hectares representing one-third of the total forested area; in Switzerland,

the proportion is as high as 72.2 percent, of which 4.9 percent is owned by the cantons and 67.8 percent by lesser communities and corporations.

The predominance of community ownership in mountainous regions is perhaps due to the very feeling that, where living conditions are somewhat difficult and large financial resources lacking, this form of ownership is best calculated to ensure the benefits which the community has a right to expect from the forest:

(*a*) protection against avalanches, erosion, falls of rock;

(*b*) shelter and sometimes additional pasture for cattle;

(*c*) supplies of wood for heating and the repair of buildings.

If shared out among the members of the community, these forests would be subject to the whims of individuals and would run the risk of destruction or impoverishment until they could no longer fulfil those indispensable functions.

Collective forest-ownership, rooted in the past, takes the most diverse forms. In its simplest form, ownership is vested in an administrative unit with a certain legal autonomy: e.g., a village, a rural parish, or a town. Regulations, sometimes nationally applicable, sometimes peculiar to a region or even to individual administrative units, lay down the rights of each inhabitant to the production, in money or kind, of the forest. In the same way, the authorities responsible for managing the forest are appointed according to local, regional, or national usages or regulations.

It often happens, however, that the property and the normally-constituted administrative unit do not exactly coincide. For instance a forest may be owned solely by the inhabitants of a hamlet which is part of a larger parish. It may belong to several parishes or again to several hamlets lying in different parishes. Once again, in these various cases, the responsibilities for management and the methods of sharing products are determined by regulations which are the fruits of the lengthy historical evolution of these communities. Generally speaking, however, the fact of being a permanent resident — or having been resident for a certain period — in such villages, parishes or towns, entitles an individual to his share in the benefits from the common property.

Value of the community-owned forest

This form of collective ownership presents considerable advantages. It does not of course in itself guarantee that the forest will receive the best kind of management; but at least it creates in the group of collective owners an attitude of mind in favor of the conservation and good upkeep of the forest. This way of thinking is so healthily developed in some countries that local authorities can be permitted complete liberty in the management of their forests; they will themselves employ all the specialists they require, helped by efficiently-trained and adequate staffs. The State, or its higher administrative organs, does not have to interfere save in laying down the broad lines of national forest policy and the general executive regulations with which the collectivity naturally complies. But the State may further intervene, if necessary, by aiding financially a collectivity wishing to carry out large-scale works, for instance road-building or the planting of wasteland.

If, however, the State authorities consider it advisable to exercise a stricter control, this can easily be done, for the owner in this case is the collectivity, and State action can be justified in that the State is, in a sense, guardian to the collectivity, and must see to it that collective properties are managed not solely in the present interest of the population, but also with due consideration of the future.

There is a further advantage in this type of ownership: it is sufficiently flexible to solve a possible conflict of interests between local and more general requirements. There is no reason why the members of a forest owning collectivity should not receive their shares of the income in kind rather than in cash, and so long as a certain kind or quality of timber is needed by the members of the community, the forest can to a large extent be managed so as to satisfy those needs. If and when the need ceases, methods of management can be changed so that the forest, now serving wider requirements, can still yield to the community an income equal or superior to that which was formerly enjoyed.

The value attributed to this form of collective ownership is evidenced by the fact that several countries where it is rare or non-existent are encouraging its development. In Turkey, for instance, villages and towns in areas far removed from forests are obliged to plant at least five hectares. The State grants suitable public land free of charge for this purpose, or the plantations are established on lands already belonging to the collectivity. In 1951, more than 400 villages had already established new woodlands, and the number is still increasing. Village forests are a feature also in Cyprus: this policy is, indeed, general throughout territories administered on the British pattern.

In North America, the pattern of evolution, which elsewhere resulted in the establishment of forests owned by villages or administrative communities, has not occurred but there is a marked tendency here also to create town and rural community forests. Perhaps the establishment of school forests may be regarded as a step in the same direction, although the chief purpose of this is education and demonstration, clearly useful objectives.

A still more interesting development is to be noted in countries where there is no private ownership of forests as such. Here similar organizations have been set up which, if they do not amount to collective ownership at least imply collective use. In the Soviet Union, several million hectares of forest have

been turned over to *Kolkhozes*, which manage them under the control of the central administration. This is tantamount to recognizing that the local populations near the forests have a right to some priority in the satisfaction of their needs. From these forests the *Kolkhozes* have to obtain the fuelwood and building timber for their own use. Where the *Kolkhozes*, because of their location, could not be afforded such advantages, the general policy of the U.S.S.R. is, we know, to develop artifical plantations, especially in the form of shelterbelts for protecting soils and crops from the erosive and drying action of wind.

Recent reports, it is true, suggest that the management of the forests allocated to *Kolkhozes* is not entirely satisfactory. This, however, does not seem to have affected the principle of the thing; but perhaps the central control will be tightened to ensure that the forests are properly managed both to the advantage of the *Kolkhozes* and to the country as a whole.

In other countries where the forests are entirely State owned, special measures customarily ensure that the rural populations in the vicinity of the forests can obtain adequate wood supplies by the institution *de jure* or *de facto* of commoners' rights, which provide a solution satisfactory to a greater or less degree according to the control maintained upon the exercise of such rights. In Thailand, for instance, where there are no private forests, the Forest Service places restrictions only on reserved species (those of commercial value) while anyone is free to cut the unreserved species.

Corporation forests

Collective forest ownership which has evolved from history is not always vested in a civil administrative unit. There are the parallel cases of forests belonging to religious communities, numerous not only in Europe but also in some Moslem countries; although, in the latter case, it is a matter rather of perpetual rights of usufruct than genuine ownership. There are also some forests collectively owned by public charities, the management of which is more or less directly State-controlled.

On the other hand, there are cases in which the rights to collective ownership have assumed an entirely personal character. They no longer depend upon the individual's membership of any administrative collectivity: they are vested in his person and are passed on to his descendants. These forests might be called Corporation forests, which is the name applied to them in Switzerland where they occur fairly frequently.

In that country, such forests occupy 40,000 hectares, 12 percent of the total area of private forestland. In the Federal Republic of Germany, forests of a similar category cover 280,000 hectares or 4 percent of the total forested area, and in Austria 138,000 hectares or much the same proportion. These two figures include forests belonging to recently established companies. Forests of the same type are to be found in France and elsewhere in Europe.

The historical origin of this form of ownership is the free banding together of individuals into a corporation, obviously under the pressure of economic conditions. In Switzerland, at any rate, many of them are Alpine corporations, owning, besides forests, extensive acres of alpine pastures, and they were nearly always originally constituted for the purpose of managing these pastures in common. In the Schwyz canton, for instance, there are very large corporations of this kind, totalling several thousand members and holding several thousand hectares of grazing land. Some forests known as *forêts de bourgeoisie* originally belonged to the citizens of a town, but since the ownership rights were vested in their persons and not in the town, these forests too are now corporation forests.

Corporation forests are completely independent of modern administrative units, and their administration is governed by regulations laid down in times long past and which are generally very strict; the corporation's supreme tribunal is the assembly of members.

As in the case of any other forms of ownership, it does not necessarily follow that a corporation forest is by the nature of the title deeds, thereby well managed. On the other hand, especially if it has other property besides woodlands — for instance alpine pastures that yield a high income — the corporation usually has enough current revenue to assure good management of its forests and enough capital to invest in improving their productivity.

Company-owned forests

The same advantages can accrue to any society formed by forest owners for the management of their forests, each proprietor contributing to the Society his own property, so that the forests can be managed as a single undivided unit.

There appear to be no legal obstacles to the formation of such societies in any country where the private ownership of forest is sanctioned in law. Technically, there may be difficulties in assessing the comparative worth of the various forests contributed by members in order to credit each with his fair share of the society's capital because the potential productive capacity of the land must be taken into consideration, besides the present value of the existing standing timber. But this is not an insurmountable difficulty.

Society-owned or company-owned forests are to be found in many countries, and some are very extensive. Of the 400 or so private forests exceeding 20,000 hectares in the United States of America, most belong to societies. Commercial companies connected with the sawmill or pulp industries together own more than 20 million hectares of forest. In Finland, industrial societies hold more than 1,400,000 hectares, the units averaging 36,000 hectares. In Sweden, similar properties amount to 25 percent of the country's total forest area. Railroad companies are often among the biggest forest-owners, as in Brazil, where one company has planted eucalypts on a considerable scale to supply fuel

for its locomotives, and some metal industries are doing the same, to assure a ready supply of wood for their blast furnaces. Similarly, pulp mills in Italy and Spain have planted, or are planting, trees on a large scale. Some purely commercial enterprises are buying up forests as securities and a profitable form of investment.

This tendency is of interest and value in that it reverses the trend towards the fragmentation of forest land. There is a danger of course that good land which, in the light of the country's economic conditions, might more advantageously be used for agriculture, may be planted to trees. But at least when the forests are owned by big industrial enterprises using the wood as raw material for pulp-mills, for example, the fact that enormous capital is invested in these industries which cannot be redeemed in a matter of a few years, itself affords a solid guarantee, if not an absolute one, that the forests will be well managed on a sustained-yield basis. The big timber firms, owning forests in the United States and in northern Europe, employ large staffs of foresters. If the mills are equipped (as is usually the case with the bigger organizations), to process the whole outturn of the forest in the most economical way, then there is an integrated harmony in the business as a whole and between the mills and the forests which feed them. None of these advantages obtains, of course, where companies are under-capitalized and are seeking only a quick return or a profitable speculation. Even in the best examples of integrated forest industries, there is always a risk that control may be gained by a group of shareholders whose personal interests are at variance with the long-term sound running of the concern; and the forest will pay the price.

Growth of the company-owned forest

All the bodies dealt with in preceding paragraphs have this feature in common, that they are industrial or commercial organizations whose ultimate object does not lie in the management of the forest. For them forest management is incidental, even in the case of the big timber industries. It would be quite possible for them to draw their raw material from forests that did not belong to them, and this is what usually happens at least as far as a part of their supplies is concerned. In most cases, their constitution is greatly different from that of the societies we examined at the beginning of this section. They are not composed of forest owners who band together in order to facilitate the management of their forests and to get better financial returns from them; they comprise individuals with money capital who combine to create an industrial organization or a commercial enterprise, and who find it profitable — either as a means of obtaining raw material for the industry or as an investment for capital — to buy fairly extensive areas of forest.

Of interest are the attempts made in some countries to bring small investors into such societies. The principle of the joint-stock company is the encouragement of small investors to take part in a large-scale enterprise; when, however, such a company acquires a forest, the latter does not necessarily mean anything more to the shareholders than any other properties which may constitute the company's assets.

Such a scheme, launched in Chile, has an original feature in that the company consists in reality of two bodies: a forest-holding in common, and an agrosylvo-industrial body. One of these companies, for instance, provides in its statutes that any co-operator holding stock to the value of 50,000 pesos (payable in several annuities) becomes owner of an allotment (not individually distinguished, it is true) of a 20,000 hectare forest. The resulting registered capital of one milliard pesos will be used to create a huge integrated forest industry, supplied from the forest, and ambitious tourist facilities. Invested capital is remunerated in the form of life annuities, and the co-operators enjoy several advantages which make the proposition very attractive: it is even accompanied by shares in several national lotteries and by a life insurance which, in the event of the co-operator's death before completing the purchase of his holding, guarantees the payment of the balance.

Here, then, is an ingenious scheme which, without fragmenting the forest, yet contrives to make a number of people interested in its efficient utilization; it tends to develop their "forest conscience" and usefully promotes forest industries. Chilean law allows a society of this kind to take a co-operative form, which entitles it to considerable tax relief.

Compulsory aggregation of fragmented forests

Although there is no legal impediment to voluntary grouping by small forest owners, the institution of collective ownership by private owners rarely comes about by itself, despite the acknowledged drawbacks of small holdings and the obvious advantages of mergers.

The reason lies essentially in the individualism of the private owner. When his forest is completely merged into the property of a collectivity, the small owner obviously loses his freedom to work his forest how and when he wants. To receive, as from community forests, the produce at regular intervals is only a partial recompense, for the forest no longer represents a reserve against "a rainy day," as it is so often regarded by the small owner. And the sale of his holding in co-operative society would deprive him for ever of any rights over the land.

So far as is known, there is no country at the present time where there is any legal obligation for small owners to form associations and integrate their forest properties into single management units. There are, however, several co-operatives in Germany which originated from special legislation of this nature introduced before the Empire.

This was the beginning of the *Jahnschaften* of Olpe

(Hesse) which were constituted in pursuance of a decree by the Grand Duke of Hesse in 1810. Between that year and 1848, 5,000 hectares of forest shared by 2,000 owners were incorporated into 36 ownership co-operatives, involving complete mergers of the forest properties. In 1897, a special forestry ordinance directed that the coppice in the area should be converted to high forest under State supervision; this measure helped rekindle the interest of the co-operators in their common property. The *Haubergsgenossenschaften* of Siegen (Westerwald), with 225 associations grouping 30,125 hectares and 11,000 owners, is a similar example, which also involved the conversion of coppice to high forest.

A measure in the same spirit — also in Germany — was the 1854 forestry ordinance issued in the district of Wittgenstein (Rothaaregebirge), obliging the smallholders of fallow land in 55 villages to band together in co-operatives for the purpose of reforesting the area. These co-operatives, however, were less strictly controlled than those mentioned in the paragraph before and they had little success. Only three could be successfully organized, grouping a total of 430 hectares, and the relative failure was attributed to the large capital outlay needed for the replanting operations, and loss of interest by the owners when deprived of control of their own lands.

The formation, voluntarily or otherwise, of associations of this kind is unquestionably easier where the lands to be grouped carry fairly uniform cover initially of little value (like scrub coppice which it is intended to enrich with better timber species), or are bare and can be profitably reforested. There is at least no difficulty over assessing fairly the different values of the aggregated lands, and there is an obvious incentive: the hope of securing profit, by common effort, from lands which hitherto bring in practically nothing.

The Mexican Unidades

A present-day example can be given of private owners being required to group their forests into a single working unit. Provision for this is contained in the Mexican Forest Law, article 13 of which provides for the establishment of *Unidades Industriales de Explotación Forestal.* The formation of forest *Unidades* for supplying a forest industry with raw material is regarded as being in the public interest, and the grouping may apply to any system of ownership. A *Unidad* may therefore include private property as well as national forests, or forests belonging to *ejidales* as well as to the communities. The owner loses no property rights over his land or over the forest upon it. Neither need he form an association with the other owners whose lands are included in the same *Unidad.* His forest, however, is integrated into a general working plan for the whole *Unidad,* and under this scheme, all the timber felled is reserved for the industry that is to be served by the *Unidad.* Each forest owner is free to bargain on the prices to be paid by the industrial concern, but if agreement is not reached, the prices can be arbitrarily fixed by the administrative authorities. If the *Unidad* includes *ejidal* or community forests, the working plans must make allowances for furnishing the wood requirements of the local populations who are the actual collective owners of the forests.

The request for the creation of a *Unidad* must come from the promoters of the industrial company, and authorization is only granted upon the production of reliable guarantees. The scheme has to be declared in the public interest by a Presidential decree. The Company's request must be accompanied by a working plan for the *Unidad,* based upon a detailed inventory which is subsequently carefully checked. The various interests concerned may have to submit to a public enquiry attended by representatives of both the Ministry of Trade and the Ministry of Agriculture, and, when necessary, the Department for Rural Agricultural Services.

This system works effectively and has given good results. It creates close ties between industry and the forest areas supplying the raw material, and does away with the obstacles to efficient management raised by the fragmented forest. It is doubtful, however, whether the system could be readily applicable where individual forests are small and ownership is much split up (for the Mexican forests are not of this kind). It presents, too, a disadvantage in that it is sometimes difficult to establish fair prices where the purchaser has a monopoly of the produce and there is no competitive buying. There is also no outside stimulus on the industrial enterprise itself to keep its methods and utilization techniques up to date. These drawbacks can of course in part be obviated by stricter State supervision of the company in return for privileges granted.

Fairly recently, legislation was introduced in the United States providing for the integration of all or part of a national forest with forest areas owned by commercial enterprises with a view to guaranteeing industries adequate sustained supplies of raw material. In spite of being hedged round by very cautious procedures, these measures have often been severely criticized as smacking of favoritism in the matter of raw material supplies and the recruitment of manpower. Such criticism might equally be launched against the *Unidades* and in both cases could only be answered by unequivocal State control over the enterprises which stand to benefit from the system. The adoption of some such scheme as the *Unidad* seems to be the answer to developing forests which are difficult otherwise to open up, such as virgin tropical forests which are parcelled out among various owners, as is frequently the case in South America.

Obstacles to unifying fragmented forests

Leaving aside exceptional cases such as that of the *Unidades,* the " rugged individualism " of private forest owners is not always the only obstacle in the way of

setting up the kind of societies which have been discussed in this chapter, i.e., societies whose capital consists essentially of the forest lands belonging to the members who surrender their properties with the object of sharing in the profits that the Society can derive from the working of a forest tract sufficiently large to be managed to good advantage.

Sometimes the obstacles are legal in character, and it would perhaps be a good thing for governments that are faced with the problem of forest-fragmentation to take another look at the legislation relating to the constitution of co-operative societies, so as to obviate any difficulties in the way of forest smallholders. Company acts are aimed, as a whole, at helping or limiting, regulating or controlling the setting-up of commercial or industrial companies or societies. The forest societies of the type considered here have not, primarily, a commercial purpose; the forests which constitute the major part of their capital would be able to produce revenue without the necessity for the formation of any society, the purpose of which is essentially managerial.

How inadequate current laws are for the purpose of encouraging such societies has been recently revealed in France, where the law has had to be amended. French forest owners wishing to join together could previously only have recourse to four types of association. The ordinary commercial or industrial company was clearly unsuitable, being subject to taxation which would be out of all proportion to the income to be expected, especially where the prime object of the association was afforestation. The co-operative society, exempt from heavy taxes, nevertheless, by definition, excluded the complete merging of the forest lands, for each co-operator remains in possession of his own land. Moreover, this type of society, intended essentially for farmers, did not lend itself to proportionate profit-sharing among the members over and above the amount of fixed interest payable to each member on his shares in the co-operative. Finally, a *societé civile*, thanks to recent legislation, is subject to hardly any taxes save those which would normally fall on each separate member of the company, and would be well suited to the purpose in view; but its constitution, calling for unanimous agreement among the parties (and hence requiring a precise determination of every owner — sometimes difficult in the case of split-up properties) often presents insurmountable difficulties. A fourth type of association, the syndicate, which can be formed with the unanimous agreement of owners, could only serve for carrying out specific operations — replanting, for example — but not for the management of forests already constituted or later to be constituted.

An ordinance was issued on 30 December 1954, modifying the terms of associations to fit the needs of forest owners and, in particular, to allow them to merge their several forest lands.

This ordinance provides for the formation of forest associations for the purpose of "establishing, improving, equipping, conserving or managing one or several forest tracts," and all operations pertaining thereto, save those which would not constitute "a normal extension of agrarian activity," i.e., strictly industrial or commercial activities. This form of association is similar to a *société civile*. The parties in association are exempt from conveyancing dues or taxes on the value of the properties which they contribute to the group; the value of such properties is not represented by negotiable shares but by holdings which cannot be transferred to a third party outside the association except by the consent of the majority of the members. Moreover, in two cases at least, the formation of a forest group does not necessitate the adhesion of all the interested parties. One is the case in which a forest, following property division or inheritance, is held in joint possession — a situation which, in French law, would entail the regrettable fragmentation of the forest if one owner wished to release himself from the joint ownership. The other owners will, in the future — if they represent two thirds of the membership — be able to organize a forest group to buy the rights in jointly-held properties from those co-proprietors wishing to withdraw. The other case is where the owners hold lands included in afforestation areas, which may be so rated by the Minister of Agriculture in pursuance of a 1942 Act, as they are areas where afforestation is considered as being in the public interest. The Act of 30 December 1954 gives further powers to the Minister; he can compel all or some of the owners of land in an afforestation area to form a syndicate — a forestry association — to carry out the afforestation and to manage the forests once they are constituted unless the owners decide to set up a forest group.

This example shows that the legal obstacles standing in the way of the formation of forestry associations, so to allow a complete merger of the members' lands, are not always solely fiscal. But whereas in most countries considerable tax reliefs (and other advantages) are granted to owners wishing to plant forests, taxation is often relatively onerous on existing forests; it is desirable that these conditions should not be aggravated if associations intended to facilitate good forest management are to be encouraged.

The parallel fragmentation of timber industries

The fragmentation of forest property is a serious problem in some countries. But still more countries are affected by a related problem which is often less remarked on, because there are few statistics available. This is the fragmentation of forest industries.

Fragmentation is not a feature of modern industries like pulp manufacture which requires large capital investment. On the other hand, it is extremely common in the case of the sawmill industry which still takes most of the timber cut in the forest. For instance, a multiplicity of small sawmills is characteristic of forest industries in all European countries.

In 1950, there were 39,000 sawmills registered in

the United States, of which 38,000 had an annual production of less than 2,525 standards of sawnwood. The production of many sawmills is naturally much lower than this; in Europe, it is as low as a few standards only. There are reported to be 1,100 sawmills in Greece and, since the volume of timber extracted annually is about 250,000 cubic meters of roundwood, the sawmills can be reckoned to absorb a yearly average of only 250 cubic meters each of roundwood at the most.

In other countries the situation is little different, aggravated by the fact that, in many parts of the world, sawing is still largely done by hand. In Paraguay, for instance, there appear to be some 500 to 600 pitsaws in operation and only about ten mechanized sawmills. In Eastern Pakistan, the pitsaw is almost exclusively used for sawing timber. The output is naturally very low — considerably less than 0.02 standard per man per day. Even in countries where there is more modern equipment, the number of sawmills tends to be high. In the Philippines there are 400 sawmills for an annual output of 226,840 standards of sawnwood, i. e., an annual output per mill of 567 standards of sawnwood.

The owners of most of these sawmills extract from the forest at least a part of the timber they convert, but they also buy roundwood, either from small forest owners who extract logs themselves, or from small logging enterprises. The latter are therefore even more numerous than the sawmills. Many small sawmills, in addition to working their own timber, do job work for local people, so that only part of the sawnwood that they turn out appears on the market.

There is of course an easy explanation for the multiplicity of sawmills. Roundwood is difficult to transport in bulk, and hence the advantage of setting up small sawmills as near to the source of supply as possible and sufficient to cater for local needs for sawnwood. The development of communications and mechanized transport tends towards the elimination of at least the more uneconomic mills. Still, fragmentation of forest properties favors the continued existence of many small mills which are able to obtain adequate supplies even at the cost of strong competition. Moreover, the small sawmill is often a sideline for a woodland owner, who is also a farmer and works the sawmill during the off-season with the help of his family or a small number of workers.

Pros and cons of the small sawmill

The small sawmill has undoubted advantages. It is a useful asset to the life of a rural community, for it gives employment to several people and supplies local needs for building timber at the cheapest price. The mill may form the nucleus of local industry and when, as often happens, it combines a related activity like making furniture or agricultural implements, it can become a source of prosperity to the community. The development of such enterprises is, for instance, obviously desirable in isolated rural communities where there is seasonal unemployment among farm workers.

In general, however, a multiplicity of small sawmills is regrettable. The owners are usually short of capital and are unable to keep up-to-date with technical advances (assuming that they know anything about them) or to renew their equipment in time. The machinery is usually inefficient and out-of-date, and — what is often the most serious — causes much wastage. The use of obsolete machinery and lack of organization means ineffectual use of power and labor. Despite the possible savings on delivery costs of the rough timber, it also means that the resulting sawnwood is likely to be unduly expensive. This very fact suggests that better organized large mills will tend to oust the smaller ones, which in any case rarely work to full capacity. In the Philippines, for instance, the potential capacity of the sawmills is twice their actual output.

Those drawbacks which can be urged against the small sawmill apply also to small logging operators. These small operators tend to be inefficient because they lack the modern equipment needed, especially when it comes to felling and extracting timber from difficult or remote areas. It is questionable whether the safety of the workers is better or worse safeguarded than with the big operators; and an enquiry into the real wages and living conditions of the workers might also be useful. In all fairness though, it must be admitted that the small operators give employment to local workers who might otherwise be unemployed or would drift to the towns, to the loss of both agriculture and forestry. Secondly, small operators can perform a useful function in silvicultural operations. Small teams, more easily controlled than large ones, are also in a better position for handling small timber operations, so frequent in regions where forest property is much fragmented. They can undertake operations which give little return, like clearing young stands, a task which may, nevertheless, be important for the maintenance of a satisfactory forest output.

These advantages, however, do not on the whole compensate for the drawbacks.

The disadvantages inherent in the small sawmills or the small logging enterprises might be partly remedied by association or even by simple commercial agreements. For instance, waste might well be put to use (and this is done in some countries) by arranging for a pulp or board mill to collect the waste from the small sawmills. The owners of small sawmills might conceivably pool their available capital and — wholly or partly, with or without the help of the State or banks, — finance the setting up of a special plant to process the waste. The owners might also combine to carry out certain operations in common, that is, the extraction and transport of the rough timber for their sawmills. Such associations exist in some countries, as for instance for floating timber to delivery points, and both the small sawmills and the big industries participate in them.

There are possibilities in every country for this kind of association; but each particular instance must be

individually examined to determine whether the existing forms of association and the law pertaining to them are conducive to the conditions to be fulfilled as well as to the industrial policies envisaged. If, for instance, it is desired to concentrate the sawmill industry, it is obviously useless to help keep the small sawmills in being by facilitating certain of their operations. If, on the contrary, small sawmills are considered to be of value, measures must be taken to remedy their defects. If the aim is to induce efficient utilization of sawmill waste, some help may need to be given in the form of loans, tax exemptions or subsidies, because the small owners could not normally stand the taxes which might be levied upon the formation of a new company for utilizing much waste, nor could they probably find the capital to organize collection of the waste. If the efficient utilization of waste is important to the economic life of a country, as where forest resources are strictly limited, State help in setting up an appropriate association should be amply justified.

A complete merger of the production resources of small sawmills on the model of the complete merger of small forest properties would be difficult to organize. It would, in fact, mean the liquidation of the small existing concerns and their substitution by a new enterprise which might retain little of the old equipment or machinery. But an association of owners of small sawmills would offer some worthwhile advantages for the carrying out of limited operations, such as felling, extraction and transport of raw material supplies, although this might mean a large financial outlay on machinery to be really efficient.

III. DEFENCE OF PUBLIC OR PROFESSIONAL INTERESTS

Something has already been said about those forms of association which create the closest bonds between their members; in this section those associations are discussed which tie their members least closely. Co-operatives, which occupy an intermediate position, are mentioned in a later section.

To say that the associations now to be examined are not concerned with looking after their members' financial interests, is not to say that they are of scant importance. On the contrary, they often have a considerable influence on the determination of forest policy.

Associations for the defence of public interests

Perhaps the most effective from this point of view are associations formed for the protection of public interests — usually the conservation of natural resources or, more specifically, of forests. The aims of associations of this kind could not be more clearly expressed than in the few lines which one of them, long active in Connecticut, U.S.A., prints on the cover of its bimonthly bulletin:

> "The Connecticut Forest and Park Association..... is a voluntary organization for conserving forests, scenery, wildlife, and developing natural resources and outdoor recreation. The Association's aim is to make Connecticut a better place in which to live. Accomplishments are limited only by our membership support".

Structure and functions

The members of associations of this kind do not necessarily have any direct connections with forestry or forest industries. They may be men and women from all walks of life who appreciate the values, economic and aesthetic, of natural resources and who are anxious to develop the same spirit of awareness in their fellow-citizens. Many of these associations include among their members men of letters and of science, especially botanists, ecologists, biologists and geologists, who not only contribute their expert knowledge to the associations, but also find through them a means of making known the practical results of their own research. If it were not for such associations, these results would all too often remain hidden in abstruse literature available only to the eminent expert in the same sciences. The associations, in short, afford a bridge between the scientists and the general public, apprising the public of new knowledge and the results of research affecting the balance of natural resources.

The associations often play a role of even greater value in that they can rouse a strong public opinion on matters of genuine interest and coerce governments into taking action. They have on occasion successfully campaigned against other associations which threatened danger to the conservation of natural resources in general and the achievement of sound forest policy in particular.

It is true that sometimes these associations have tended to adopt a too narrow concept of conservation as an end in itself and not as the natural development and indefinite utilization of resources for the benefit of man. This has at times resulted in some frustration and friction with official services, which is easily avoidable if the associations are well guided in their policies by scientists and experienced administrators. In countries where forestry is still something of a novelty, there is little hope of its strong development without the help of associations of this kind.

Methods and activities

There are generally no legal obstacles in the way of forming such non-profit associations. Their activities are largely determined by their income which normally comes entirely from the members' subscriptions, although some associations do receive State grants.

Most associations of this kind publish regular or occasional bulletins, which vary in importance from simple broadsheets to full-scale magazines, carrying articles, usually written by members, on topics of general or specialist interest. Although direct circulation is usually limited, the bulletins provide a quite powerful means for spreading ideas, for the material they contain often reaches a wider public by being reproduced in the local and national press.

Associations frequently organize tours and meetings not solely for the members but also for smallholders, farmers and foresters, to study conservation problems on the practical side. They take an active part in the organization of special flag days for making conservation activities known — like arbor days for example. One valuable effort lies in the encouragement of courses on conservation in the schools or at least in teachers' training colleges. As one example, the New York Conservation Foundation made a grant to the Plymouth High School (New Hampshire) to finance an interesting experiment in linking instruction on conservation with other subjects taught in the school.

Sometimes an association's activities take an essentially practical form. They may, for instance, employ full-time specialists to serve as advisers to small farmers or woodland owners; establish tree nurseries in order to furnish plants of guaranteed strain and quality; set out fire-warning notices, or signpost trails and tracks in mountain areas. Naturally there is liaison with governmental services working in the same fields.

While many associations may have a useful impact on local matters, if they wish to exercise some influence at the national level, they must affiliate. Similarly, national associations tend to establish local branches throughout the country.

Take, for instance, the Tennessee Conservation League in the United States. This was founded in 1946 by the combination of a number of associations of hunters, fishermen and conservationists in the State of Tennessee. The organizations within the League originally numbered seven. In 1947, they had risen to 25, in 1954 to 84, either through the adherence to the League of already existing clubs or through the formation of new branches. The League set up special committees for dealing with particular problems: its Forestry Committee helped to found the state-wide Keep Tennessee Green Association, while another committee dealing with pollution abatement has greatly influenced the State decision to adopt useful measures against the pollution of water courses.

An example on the international plane is the International Union for the Protection of Nature which now brings together not only individuals and non-governmental national organizations interested in the conservation of natural resources but also governmental agencies that need to keep in close touch with progress in this field. The Union has, and it is to be hoped will increasingly have, an important function, for very many conservation problems override national boundaries. By frequently bringing together eminent persons and giving them a wide international hearing, the Union reinforces the authority of the associations campaigning for conservation in individual countries, and at the same time makes possible a co-ordination of research on some questions which, by their nature, call for a measure of international collaboration.

Forestry associations

The associations considered now are somewhat similar to those above in that they seek no profit for their members or for themselves; their aim is to influence public opinion, and sometimes, through public opinion, the national legislative and executive bodies, with a view to making forest policies conform to the best public interests. They are not necessarily concerned primarily with forest conservation, but equally with the economic and social sides of forestry.

They bring together individuals or bodies directly concerned with the forest: professional or amateur foresters, representatives of industry and trade, and forest owners.

These associations, like the preceding ones, may be constituted without long and difficult procedure and similarly they undeniably help the public to understand, and governments to formulate, sound forest policies. But the fact of their bringing together persons from widely differing circles constitutes a potential difficulty. There is some danger that the representatives of certain circles may have a dominating influence in the association, either because of their numbers or because of their wealth or social position. These persons may then be tempted to avail themselves of the prestige of the association to further the particular interests they represent, using the organization as a means of putting pressure upon public opinion, governmental thinking, and legislatures.

Forestry associations are particularly well organized in North America, and two examples chosen are taken from Canada and the United States; the one mainly because of its influence on public opinion, the other chiefly because of its influence on legislative and executive circles. A third example, of a more technical character, is quoted from the British Commonwealth.

QUEBEC FORESTRY ASSOCIATION AND THE FOUR-H CLUBS

The Quebec Forestry Association is still a young organization but it has many brilliant successes to its credit. It was founded in 1939, by foresters, economists and educators, following a formal resolution adopted in 1937 by the General Congress of Forest Engineers of Quebec Province. Its object was to stimulate public awareness of the problems of the conservation of natural and forest resources in the Province. The initial problems to be explored by the Association were public responsibility vis-à-vis forest fires, and inefficient felling practices in private and public forests.

The Association considers that it should work mainly through young people. In 1942, the Association founded "4H Clubs," borrowing the name from the United States where 4H Clubs have been officially in existence since 1912. Only the name was borrowed, for the activities, objects, attributes, badge and formula of the Quebec Clubs differ from those of the United States and of the other Canadian Provinces in that they are private clubs, entirely organized and maintained by the Quebec Forestry Association, and their activities are only concerned with forestry matters.

The Quebec Forestry Association is itself a private organization. Its funds come chiefly from the contributions of members, the public, forestry enterprises and various industries.

The extent of the Association's influence may be gauged by the fact that, at the end of 1952, 12 years after its foundation, there were 250 4H clubs in Quebec Province, with more than 9,000 members, one-third being Clubs for girls, two-thirds for youths.

The Association and the Clubs are run in close conjunction. The head office and the eight regional offices of the Association and of the Clubs work jointly, the Clubs being regarded as the junior section of the Association. Five whole-time and six part-time foresters dedicate their services both to the Association and the Clubs. They travel around the Province meeting members, they issue publications on the conservation of forests and natural resources, and direct, through radio, newspapers and all other media, a vast program of conservation publicity. The Clubs recruit their members from the countryside or the villages. They are run by adults, among whom are lay or religious teachers, timber merchants, professional foresters, industrialists. The Association's monthly magazine *Conservation* always contains several pages devoted to the activities of clubs or addressed to their members.

The American Forestry Association

Created in 1875, the AFA is the oldest national forest conservation organization in America. Membership includes professional foresters, administrators, educators, representatives of the timber industry and the banks, and publicists specializing in questions of conservation or in the timber industry.

The Association is run by a President, a Vice-President, a Treasurer, a Secretary, and a Managing Director who is a forester; and there is a Board of 15 Directors. Among the members of the Board of Directors and the honorary Vice-Presidents are the former Chief of the Federal Forest Service, Presidents of powerful associations like the American Planning and Civic Association, or of special committee of such associations (General Federation of Women's Clubs Conservation Department), University Presidents or Deans, Directors of Forest Research Stations, and many top executives of large industrial companies.

The American Forestry Association issues a monthly magazine, *American Forests*, which reminds the reader at the beginning of each number that the AFA is a national organization, independent and non-political in character, for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and their part in the social and economic life of the nation.

This Association can, indeed, claim to have been successful, and its contribution to the development of United States forest policy has been considerable. Its influence on public opinion — and perhaps especially on governmental circles — was partly responsible for the creation of National Forests and the organization of the Federal Forest Service.

To give a clearer notion of the way it acts, it might be of interest to indicate its present aims and how it proposes to achieve them.

After much preparation and discussion, a forward program was adopted by a large majority in a referendum among members in 1954. The program has three main points:

1. to meet the essentials of forest *protection;*
2. to improve the national *timber* crop in volume and quality to meet all needs;
3. to obtain the maximum of *economic* and *social* services from the forest.

In order to achieve these objectives, several lines of action were proposed. The first proposal, and the one which was most hotly debated, was for an overhaul of the system of forest ownership. This point, if it were to be achieved, also called for tactful approaches to State governments and federal legislative bodies; and, since it was liable to rouse considerable feeling and stimulate the greed of private interests heedless of sound forest policy, it required thorough and scrupulous examination.

The Association first of all proposed that the question be examined at the federal level by the formation of a Joint Congressional Committee composed of members of the Senate and House Committees on Interior and Insular Affairs, of the Senate Committee on Agriculture and Forestry and of the House Committee on Agriculture. The Association intended to organize a group of experts in the matters raised, the group to report upon the possible objectives and terms of reference of such a Joint Committee, and to draft a bill for the constitution of the Committee to be presented in a session of Congress. The Joint Committee would have available a wealth of material already prepared or being prepared by the Forest Service, the National Parks Service of the Department of the Interior, the Fish and Wildlife Service, and the Bureau of Land Management.

Moreover, the Committee would later have at its disposal the reports which the Association hoped to receive from committees set up by the Governments of the States affected by the question. A resolution

suggesting the organization of such State committees had already been presented by the Association to a meeting of the Council of State Governments, as well as to the Governments individually, but nothing had come of this approach. In these circumstances the Association proposed first setting up a small national committee to review the results already arrived at by various committees examining forest ownership conditions in several States. It would then prepare a scheme for the thorough examination of the question at State level, suggesting the possible composition of the committees to make the inquiry, the probable sources of information, the estimated cost of the enquiry, etc. It would finally suggest an order of priority, in view of the urgency of the problem in some States, and would prepare a list of State personalities capable of launching a campaign for the enquiry to be set on foot. Then the Association would arrange in the State with highest priority a meeting of those personalities to form a provisory organizing committee to which the scheme of the small national committee would be submitted. On the basis of this scheme, a plan of enquiry specifically devised for the State in question would be placed before the Governor. The same procedure would afterwards be followed in other States.

This account shows the far-reaching action which such an association is capable of taking and the influence it may exert on national forest policy.

The Empire Forestry Association

The third example, from the Commonwealth, is a large body from the point of view of membership but its activities are more strictly technical, so that it belongs less definitely to the previous category, but rather marks a transition to the following one.

The Empire Forestry Association, with its Headquarters in London, was established by Royal Charter in 1921, following upon a resolution of the 1920 Commonwealth Forestry Conference. It is not an official body but a voluntary association of foresters and of those interested in any way in forestry and the products of the forest. Its principal objectives are to:

1. foster public interest in forestry;
2. secure general recognition of the dependence of timber supply upon forest management;
3. collect and circulate information about forestry and the commercial utilization of forest products;
4. form a center for, and provide a means of communication between, all engaged in forestry.

The last two are those with which the Association has most success. It organizes important conferences from time to time and publishes a quarterly review which is one of the finest periodicals in the forestry field. It has an effect, naturally, upon the forest policies of Commonwealth countries and upon the formation of public opinion about forestry. But its influence is exerted rather from within, through the personal standing of its members, rather than through deliberate compaigns as carried on by the two Associations mentioned earlier. The Association's President and Vice-Presidents include some eminent officials, such as the Governors-General of Australia, New Zealand, and of Canada, and the 1,800 or so members include not only private individuals but institutions, corporations and firms. Nevertheless, the great majority of the members are, or have been, serving forest officers.

Professional forestry associations

General characteristics

A higher degree of specialization is to be found among other associations which are limited in their membership to people of the same professional interests.

This category includes professional associations for forest workers and industrial workers, foresters, forest owners, or lastly, industry and trade associations. They all have one common feature in that they exist to protect the professional interests of their members, but they differ from the bodies dealt with in the previous section and later, in that their efforts to improve the professional standards of their members are not based upon direct action, but rather on indirect influences.

The organization of such groups is, at least in most countries, unrestricted, but their activities are generally subject to stricter rules than those applied to the associations dealt with at the beginning of this section. The qualification, generally, is used advisedly because it is often difficult to draw the line between associations whose main interest is with the forest *per se* and those whose primary concern is the financial or social welfare of the members. There are many associations which were originally created by either professional foresters or by forest owners but which now admit both categories of members, and indeed encourage an even wider scope of membership. On the other hand, there are associations of much more restricted membership whose main interests are only technical, as for instance those formed by foresters from the same forestry school, such as the Oxford University Forestry Society.

Their influence upon forest policy

These associations have on the whole a considerable influence upon the development of forest policies, but, insofar as the restricted membership tends to give each individual association a myopic outlook on affairs, they may give the wrong lead to forest policies if any one of them becomes powerful enough to impose its point of view. It is a good thing, therefore, that there should be a variety of kinds of association, so that the influence of one may be counterbalanced by another, and

potentially dangerous lines of thought be mitigated by competitive counsels.

In many countries, the directors of the most representative of such groups are officially called in, in an advisory capacity, to exchange views and consult with the government bodies that are responsible for forest policy. Thus, in 1950, the Federal Republic of Germany set up the *Deutscher Forstwirtschaftsrat* (Forest Economy Council) on which are represented, on a proportional basis, forest owners (State, company and individual), practising foresters and officials, as well as subordinate staffs and skilled workers in forest industries. The Council's object is to encourage these diverse elements to collaborate together in developing forest output, ensuring regular and adequate wood supplies, and settling import or export questions. It makes resolutions, passes on enquiries to the technical services concerned, gives advice upon request, and sets in motion the necessary actions to ensure the carrying out of any decisions which it makes within its province. Organized and run in the same way as the Forestry Council, the *Deutscher Holzwirtschaftsrat* (Timber Council), instituted in 1949, deals with matters relating to timber extraction, utilization, and marketing. The interests of these associations must of necessity usually be consistent with the general national interest. A slump in the timber industry, poor living conditions for forest workers, the impoverishment of private forest owners, inadequate salaries and prospects in the forestry profession — none of these create the right environment for sound forest policy.

Associations of professional foresters

There are associations of this kind is almost all countries where there is any appreciable number of professional foresters, but protection of the members' professional interests is often quite a secondary consideration in their formation. Since very many of the members are State officials, salary claims or other benefits cannot normally be pressed in public. In any case since the profession itself is limited in its numbers, special claims have usually little chance of being noticed unless they are presented through a stronger professional affiliation or union.

In many countries there are strong forest workers' associations whose strength lies in their affiliation with the bigger Trade Unions.

One could name many associations of professional foresters. In Norway, there is the Norwegian Foresters' Association: in Denmark, the *Danska Forstkandidaters Forening* (Association of Forest Technicians) and the *Statsskovrisderforeningen* (Association of State Forest Supervisors): the United Kingdom has its Royal Scottish Forestry Society and several others: Burma, its Burma Forest Service Association, and so on.

Most of these associations publish regular bulletins or magazines, some of the latter being the major forestry periodicals in the countries concerned. In these publications, exchange of information and news about members usually occupy little space, the greater part of the contents being allocated to technical articles.

The Society of American Foresters

To show the type of action pursued by such associations, we may consider the largest of them, the Society of American Foresters.

At the time of its fiftieth anniversary in 1950, the Association had about 7,000 members resident in the United States and in Canada, divided into 21 branches: in 1955, the figure was 10,488. Founded in 1900 by Gifford Pinchot, who was its first President, with H.S. Graves as his Vice-President, the aims of the Society were at the outset stated to be:

> " to further the cause of forestry in America by fostering a spirit of comradeship among foresters; by creating opportunities for a free interchange of views upon forestry and allied subjects; and by disseminating a knowledge of the purpose and achievements of forestry."

The Society's first task was to create the " spirit of comradeship " among foresters of America — then few in number. This aim was speedily accomplished, above all through the personal influence of the Society's first President. In 1905, the *Proceedings* of the Society began publication, and by 1911 the second President was able to insist that the Society should " take, as a body of professional foresters, a definite and public position on vital national questions within the field of forestry."

A major contribution to the protection of its members' professional interests undoubtedly lies in the part the Society plays in the training of foresters. In 1909, it set up a committee to work on the standardization of curricula in forestry schools. Since 1929, the Society's supervision of these curricula has been an established practice, and led to the setting up in 1934 of its Education Division, the first of the ten divisions that had come into being by 1950. Today, the Society extends its official patronage only to those forestry schools which conform to its recommendations on curricula.

A similar spirit lies behind the Society's foresters' code of ethics which sets out a number of rules of conduct to be observed by all members of the profession, which is thereby assured of an unequivocal place among accredited professions. The protection of the professional forester's status is a very important matter in countries where a large proportion of foresters — as in America — are not civil servants.

Immediately after the first world war, the Society took a very active part in the controversy between advocates of Federal control over private forest property, and the partisans of unrestricted liberty or of control under the auspices of the individual States. The discussions on this subject which took place within the Society undoubtedly had considerable influence upon the final decision of Congress, a decision formulated in the

Clarke McNary Act of 1924. This act, laying down the principle that the Federal authorities and the individual States should co-operate in matters concerning the protection of forest assets, forms one of the fundamental canons of United States forestry legislation.

This, however, is only one example of the Society's activity in matters of forest policy; for the Society is called upon to advise on all questions concerning nation-wide forest policy and its prestige lends considerable weight to its judgments.

The Society also keeps in touch with foreign foresters. In 1920, it created the title of corresponding member, first given to a French forester and to a forester in India. The Society is officially represented in international congresses and meetings, and in 1924 established an International Relations Committee.

In the technical field, the Society has been affiliated since 1913 to the American Association for the Advancement of Science and, since 1936, has had two members sitting on its Council. It also keeps in close touch with the country's big scientific organizations, such as the National Research Council and the American Academy of Sciences. The latter organization, following upon a lecture by a member of the Society, set up in 1924 a committee for conducting "a critical enquiry into the status and needs of research in the sciences basic to forestry." In 1926, a special committee of the Washington branch of the Society presented a report entitled: *A National Program for Forest Research*, which contained a draft for Federal legislation; its publication at that particular time played an important part in the adoption by Congress of the 1928 McNary-McSweeney Forest Research Act, which has been termed the forest research charter of the United States.

In 1927, the Society's publication, *Proceedings*, was amalgamated with another forestry periodical, the *Forestry Quarterly*, founded in 1902, and the resultant *Journal of Forestry* was first published eight times a year and later monthly. In 1955, the Society started publishing *Forest Science*, a quarterly devoted to research and technical progress. But the publications by the Society or under its auspices are numerous; we may mention, for instance, *Forest Cover Types*, *The Foresters' Field Manual*, *Forestry and Related Research in North America* and the *Forestry Handbook*, the result of work done by a score of special committees set up by the Society. Special mention must be made of *Forestry Terminology*, a glossary of 4,500 technical terms used in forestry which, compiled by a committee, was first published in 1943 after four years of work.

Workers' associations

The professional associations of forest workers and industry workers are aimed essentially at protecting the collective and individual interests of their members. These associations are usually powerful and affiliated on a national scale with other trade unions which include workers in allied industries and trades. Many of such unions are, in their turn, grouped internationally and have representation in the International Labour Organisation, one of the Specialized Agencies of the United Nations.

While workers in the wood-using industries have problems and aspirations very similar to those of workers in any other industry, and can look after their interests by the same methods, the situation of forest workers is somewhat different. Where forestry and forest industries are of minor importance in the national scene, professional forest workers are often few in number. A lot of the work in the forest is generally undertaken by farm-workers in the agricultural off-season. The forest workers therefore form a somewhat unstable group, their numbers varying with the season; hence their special interests are relatively difficult to protect. This is a pity, because the forest worker often operates under hard conditions; he runs risks, he often has to camp out in the forest, and his working hours are apt to be irregular and arduous. All this should ordinarily entitle him to a special claim to attention.

Details of the methods used by workers to protect their interests will not be examined here, but it must be pointed out that any moves by trade unions must have repercussions upon forest policy. And, *vice versa*, any substantial changes in forest policy may affect the status of the workers.

The workers' unions are perfectly aware that their own interests are closely linked to the well-being of the forest. Proof is afforded, for example, by the interest shown by European trade union delegates in forestry meetings organized by FAO or the Economic Commission for Europe.

Some workers regularly examine their own problems in the light of national forest policies and throw their weight into supporting those policies which best suit their own interests. The International Woodworkers of America, which unites United States and Canadian workers and is affiliated to the powerful Congress of Industrial Organizations and the Canadian Congress of Labor, organizes huge conventions for its members each year; and part of the agenda is always concerned with questions of forest policy.

At one such convention, the delegates stated openly that the current measure of protection against forest fires and the publicity on behalf of reforestation were inadequate for solving national forestry problems; stronger measures were needed to curb the destruction of easily accessible forests by clear-cutting or selective felling of the best trees; a vast program of road-building was needed to open virgin forests choked with decaying trees; more scientific forest management was required. Unfair timber cutting privileges, it was alleged, were granted in various forms to big companies and should be replaced by subsidies to small operators and private owners. It recommended the integration of the various categories of wood-using industries but suggested that such integration should be brought about by genuine collaboration and not by absorption by monopoly-methods favoring only the big companies.

It especially protested against the so-called co-operative sustained yield agreements to which reference has already been made in a previous section. Finally, the delegates objected to the methods used in working the private forests of the West Coast, and to the schemes then current to reserve the Alaskan forests for the exclusive purpose of supplying pulp and paper mills.

All these motions seem, at first sight, to be somewhat remote from any defence of the woodworkers' professional interests. On reflection however, it is realized that they are not; that, in reality, all these proposals are aimed at inducing circumstances which would provide steady employment in the various branches of the timber industries, either because they would tend to obviate those recurrent crises from which the workers are usually the first to suffer, or because they tend to encourage competition between industrial enterprises and so favor workers' claims towards good rates of pay.

Industry and trade associations

There are many professional associations serving the interests of industry and trade. Membership usually comprises the directors of firms and commercial companies, organized locally, regionally and on a country-wide scale. There are usually separate organizations for different sectors of industry, for instance sawmillers and the pulp and paper industries and for separate trade interests, that is exporters separately from importers. Specialized associations become more numerous the further their interests are removed from the primary wood-using industries and lead into the field of such ancillary activities as container-manufacture, furniture-making, and so on. Members of such associations are often members of Chambers of Commerce or other similar bodies with wider interests, or the associations themselves are directly affiliated with such bodies, thus obtaining a better standing.

The foregoing statements must of course be qualified according to the conditions within a country. Specialized associations are most commonly found in countries where the idea of professional associations has been long established. Elsewhere, they are less common and local associations still more of a novelty. There seems, however, a tendency for associations of this nature to spread beyond national frontiers. For instance, since the war many European and some world-wide federations, unions and associations have grown up for particular branches of the timber industry; in 1952, for instance, a European Confederation of Timber Industries was created.

The influence exerted by these groups upon forest policy in general, and even upon the rational development of industries, may be good or not so good, depending on their attitude. The purpose of such associations is the protection of professional interests: if this means a purely defensive attitude, and no effort is made, within the profession itself, to improve processes, marketing and the quality of products, then the result may be bad.

To emphasize this point, a quotation is made from a report by the Secretary of the French Federation of Timber Industries to the Congress of Productivity in the Forest and Timber Industries, arranged by the Organization for European Economic Co-operation (OEEC) at Stuttgart in 1954. This report declares that the action of professional associations may be:

> " exercised in a way which is not always in keeping with the normal canons of a sound productive system. The need to defend certain traditional attitudes has very often led to the retention of unproductive units; this has been done by inducing the public authorities to intervene in price-fixing, by artificial agreements which hinder the reduction of cost-prices, by official legal action aimed at protecting artificially certain sectors from foreign competition. Such a situation can only create uneasiness in the market and hinder the work of technical organizations. It creates, at the same time, a disastrous atmosphere in which prices rise while the best-organized firms find difficulty in selling products of quality. Professional organizations should be aware that the defence and protection of their members does not necessarily consist in a determination to save at all costs those enterprises whose presence in the market is not justifiable... "

Activities in the technical field

The technical activities of industry and trade associations may take many directions; in some countries, Germany for instance, they enter thoroughly into every sphere, which explains their effectiveness and achievements. Activities may broadly be divided into three classes.

First, there is organization of marketing, for buyers or sellers. For instance, associations or specialized bodies appointed by them for the purpose, may agree each felling season with corresponding associations of forest owners upon the basic prices to be charged for the various categories of timber sold at the stump, on the ground, or converted. They can lay down quality standards for goods produced by primary or secondary industries, and award certificates of guarantee to brands of high quality. They may organize publicity for particular commodities, or for wood in general, an important activity these days when so many good competitive materials are being put on the market. Finally, the associations may serve to negotiate wage-levels with the workers' unions. In this field, their action will usually be subject to the social legislation of the country in question.

A second field in which trade associations can — and frequently do - perform useful work is the improvement of output. Many activities are open to them. The associations can finance research to benefit the profession as a whole, such as developing new products or processes of manufacture. Associations unable or unwilling to create their own research institutes may often use existing research-centers (e.g., in North America, certain universities). A research project in which many associations are interested at present is improved felling and extraction methods and equipment. This touches another field in which associations are active: the training of forest workers and trade personnel. In many countries, apprentice schools are financed by industrial associations.

This kind of action is obviously of country-wide value, and close co-operation between industrial associations and government departments is often to be found; for the big forest products research laboratories created by the State are essentially helping progress in the timber industries, and keep in constant touch with them. It is also quite common for research institutions organized by the industries to be subsidized by the State.

Finally, a third field of action is open to these professional associations, a field in which they can have an even more direct influence upon forest policy. That is the aid which they give to forest owners — particularly small owners — in respect of the forests from which the industries draw their supplies, either wholly or in part.

The big forest industries — and especially the pulpmills — are aware of the importance of ensuring that supplies of raw materials shall be available in perpetuity. When these supplies largely depend upon private forests, and the State itself does not help adequately to ensure suitable management of the forests, and the owners are not themselves associated for this purpose, then it is possible for the industry associations themselves to offer assistance.

In Europe, generally speaking, there is everywhere some measure of control exercised by the State, and forest owners' co-operatives are already established. Industrial associations, therefore, rarely come into the picture. But in the United States, on the contrary, such action by trade associations has become quite common, for conditions, although varying from State to State, are often the opposite of those in Europe. The vast nation-wide movements are principally devised by the big industrial organizations and the impact of these movements upon public opinion in general and upon forest owners in particular cannot be underestimated.

For example, the American tree-farm movement was started on its own forests by the Weyerhauser Timber Corporation in 1940, and afterwards received the support of the Executive Committee of the National Lumber Manufacturers' Association. The movement is now run by American Forest Products Industries Inc., with headquarters in Washington, D.C. It is supported not only by forest industries but also by many private owners. Direction of the movement is decentralized, regions often being controlled by industrial organizations, such as the Northwest Loggers' Association in the Douglas fir region of the States of Washington and Oregon.

The tree-farm movement, in essence, involves public recognition of the forests of owners who guarantee to fulfil certain standards of management of those forests. The owner does not necessarily receive technical aid in the management or treatment of his forests. However, the publicity attending the acknowledgment of his forest as a well-run property is an encouragement to any owner to do his best, and makes good propaganda too, conveying to the general public the need for mutual co-operation, especially in the prevention of forest fires.

The American Forest Products Industries Inc. also co-ordinates on a nationwide scale the sister movement, with the slogan "Keep America Green." This is primarily a program of mass education in matters of protection against forest fires; and the Association has admirably succeeded in getting local schools, clubs, women's organizations, youth groups and sports associations interested in the program.

The effectiveness of these movements may be judged from the way they have spread their influence in recent years.

There are a number of other more localized industrial associations in the United States which exert their influence upon the private forest owner as, for instance, the Industrial Forestry Association of Portland, Oregon, the Southern Pine Association of New Orleans, Louisiana, and the Southern Pulpwood Conservation Association of Atlanta, Georgia.

Besides conducting public compaigns, large American industrial organizations, such as the worker's unions, have their own ideas on forest policy and strive for the acceptance of their viewpoints. The National Lumber Manufacturers' Association, for example, has thus outlined its chief aims in *The Conservation Yearbook*:

> "Its forest policy recognizes the vital relation of forest conservation to the permanency of forest-using industries, and the obligation of those industries to maintain forest lands in productive condition... It opposes federal regulation of private management practices and federal control of state forest policies; it advocates a co-operative and educational approach to forest problems, on a basis of three-way collaboration by private forest owners and the State and Federal Governments."

The United States Chamber of Commerce has a Natural Resources Department whose field of interest includes "policies concerning federal lands."

The influences of professional associations in the United States have been considered in detail; but this does not mean that the United States is the only country

where such associations have considerable influence. On the contrary, they are effective even in countries which may be called new from the forestry angle. In Chile, for instance, where the *Corporación Chilena de la Madera* (Chilean Wood Corporation), primarily an association of timber manufacturers and the trade, also includes forest owners and planters as well as a few professional foresters, since specialized forestry training is in its infancy in Chile. The Association's activities may have considerable repercussions on the general forest policy of the country. On one occasion, for instance, it declared against the forestry bill then before Parliament, and in favor of another bill which gave more prominence to the prevention of forest fires. It supported the use of material from *Pinus radiata* plantations for the manufacture of pulp, and empowered its President to work for the creation of Chile's first pulp mill.

Powerful industrial associations may do a great deal of good in countries where forestry is underdeveloped, if they are fully appreciative of the need to preserve the country's forest wealth and to use it efficiently. They can do a great deal to interest governmental circles in the development and conservation of forests; indeed, the existence and growth of forest industries is prerequisite to a proper practice of good forestry. Needless to add that such associations may also be highly dangerous where forest services are weak and ill-organized and where governments have no clearly-defined forest policies.

Forest owners' associations

Finally and chiefly in Europe and North America, there are the professional associations of forest owners, whose object is the protection of members' interests *vis-à-vis* public authorities; usually these are neither very flourishing nor very powerful, for the simple reason — as has already been pointed out — that it is generally difficult to interest small owners in their forests when these yield irregular and only longterm returns. Associations so constituted are liable to be composed mainly of large owners; and in those countries, especially in Europe, where the mass of private forest is in the hands of small proprietors, such associations tend to be quite unrepresentative. Most associations of forest owners are, however, well aware of this situation and have sought to remedy it by offering certain services to their members, such as technical training courses, expert advisory services, consultations and meetings. In consequence, it is sometimes difficult to distinguish such associations from those classed as forest co-operatives.

They differ to the degree that these associations do not usually act on behalf of their members in carrying out in their name operations such as the marketing of timber, executing improvement works, and devising working plans.

Associations in Denmark

But this distinction is itself not very clear-cut. Among owners' associations which have played, and still play, a prominent part in the development of their country's forestry, is the Danish Forest Society (*Dansk Skogforening*).

This Society was founded in 1888 with the object of encouraging the development of forestry and related pursuits. Its funds come from the entrance fees of the members, which are based proportionately on the calculated value of their forests. It has an economic-statistical department which collects and analyzes yearly reports on private forests, but also undertakes to review working plans. Its Seed Bureau accords official approval to high-class tree stands, and the seeds harvested from these are sold under guarantee of origin. But the association's major influence is perhaps exerted through its Marketing Committee, which negotiates with the timber users in order to fix the prices for the chief categories of timber supplied by the forest owners. For instance, in order to stabilize the market for beech cask-wood, a number of forest and sawmill owners met under the auspices of the Committee and concluded an agreement for sharing the outturn among the sawmills at fixed prices, the surplus of small roundwood to be sold for other uses. The country is divided into ten districts, the heads of these making up the Marketing Committee.

The Association thus directly assists the business interests of its members, at least in certain fields.

This is even more marked in the case of another big Danish Association, the Danish Heathlands Association, which has contributed much, and still contributes, to the development of the heath land which extends over a considerable area along the Danish coast, especially in Jutland. The interests of this Association, set up in 1866, are not specifically restricted to forestry. Its general purpose is the improvement of methods of working the lands of these regions, whether used for farming, stockraising or forests. Tree planting, however, naturally ranks high in this program. At the beginning, the Association confined itself to giving technical advice on the selection of sites suitable for planting, methods of making plantations, planting of shelterbelts around houses and fields, and so on. It later began to distribute (and still does so) plants free of charge or at low prices. Finally, it started supervising or carrying out tree planting itself, on behalf either of big proprietors or of the joint-stock companies formed by small owners to afforest their lands. Here, under the stimulus of a powerful association, there is a regrouping of parcels of forest lands — or at least of lands to be afforested, in the manner already referred to in the first section.

Moreover, the Association has itself become an owner of plantations, mostly by gift.

The Association is at present managed by a Committee of 51 members and a board of nine directors. There are about 19,000 members. The business activities are directly managed by five services, among them a Research Service, and a Plantations Service which especially concerns us here. This service includes 21 professional foresters and 14 technical officers. Since 1938, the service has had a mobile team working, comprising a number of technicians, trained overseers and workers, carrying out plantation operations and establishing windbreaks wherever its help was required, without the need for supervision by the individual landowners concerned.

The value of the Association's activities may be judged from the fact that the area of heathland in Jutland has shrunk by about three-quarters since 1860. During the same period, the rural population of the districts in question has almost doubled, the total population increase being higher still. Three of the directors are appointed by the State, for large governmental subsidies (about 1.8 million crowns yearly) are granted to the Association. Further State grants (about 4 million crowns in all) are made through the agency of the Association to owners or local societies for the execution of certain works.

Increasing responsibilities of associations in some countries

The last instance shows that an association of forest owners may tend to become almost a kind of State organization, and the final pages of this study will show how marked that tendency is in some countries. Undoubtedly the best way of strengthening the useful activities of such associations, of increasing their authority and helping them to recruit members is to give them a measure of State aid and some responsibility in the implementation of the government's forest policy.

In many European countries, in fact, associations of forest owners have been regularly invited, as have industry and workers' associations, to send representatives to sit on the advisory committees which help the forest service chiefs and the Ministers concerned to formulate forest policy. Obviously, however, there are all kinds of gradations possible between seeking advice from associations and entrusting them with varying executive responsibilities.

The Netherlands seems to have gone further in this direction than any other country. In 1954, a Netherlands *Bosschap* (Forestry Board) was established by Royal Charter. This is a public institution with legal powers of imposing regulations by order. Its authority extends over all forest enterprises, forests and industries whatever their size or ownership; even the State forests are under its control.

The members of the board are nominated, half by the recognized employers' associations and half by workers' associations. The association accepted as representative of the employers is the Netherlands Association of Forest Owners. The members of the board number 14 at present. Of the seven nominated by the employers, one represents the State forests, one the municipal forests, and five the private forests.

The Board's powers of issuing orders are specified but, in practice, they cover the whole province of forestry. The Board's orders cannot conflict with the law as it stands, of course, and any regulations it makes, other than those for ensuring the Board's own efficient working, must first be approved by the Ministers concerned; but the latter cannot withhold their approval unless the proposed regulations run counter to the law or to the public interest. The powers of the Board are particularly exercised in matters concerning the output of forests and forest products, and include the improvement of forest lands, protection against fire, the improvement of output quality, standards of management for forest properties, the processing and preservation of forest products, the standardization of products, questions of wages, recruitment and dismissal (except as concerns civil servants).

The Board is financed by contributions from employers. The method of calculating contributions has not finally been decided at the time of writing but it is likely to be on a proportional basis according to the area owned by each employer, the quality of the land being taken into account.

The Board will certainly have a considerable influence on the country's forest policy and on forest legislation also: for the Board has been asked to examine the forest legislation now in draft and to discuss it with the Ministry officials concerned.

Other examples in Switzerland

To revert once more to Switzerland, although privately-owned forests represent 29 percent of the country's total forested area, the chief forest-owners are the communes. Despite the very high degree of autonomy enjoyed by the communes in the management of their forests, it is well known that their methods, besides being excellent in themselves, conform without conflict to a meticulously planned national forest policy. Moreover, the value placed upon the nation's forests not only by forest owners but by the people as a whole, reaches a level rarely found elsewhere. This may be largely attributed to the work of Swiss forestry associations.

The oldest of them is the Swiss Forestry Association, founded in 1843, a very influential body of the type examined in the first part of this section.

The Swiss Timber Manufacturers' Society and the Professional Association of Swiss Timber Traders are, as their names indicate, associations of industry or trade, also exercising some influence on the national scale.

But the body which more particularly represents the interests of forest owners, although not strictly restricted to them, is the Swiss Forest Economy Association. This was established in 1921, with the object of convincing not only the people generally but also the political authorities and the forest owners, of the great economic importance of intensive forest management to a country such as Switzerland. The Association has never lost sight of its mission of propaganda on behalf of the end-product, wood, as well as the forest. It not only issues its own bulletin in French (*La Forêt*) and in German (*Wald und Holz*), but it has an information service which regularly supplies articles and news-items about forestry to more than 400 newspapers and journals. The Association organizes meetings, lectures, and talks on the radio, issues special stamps, distributes pamphlets and posters. It attaches particular importance to the instruction of school children; it adapts its propaganda to the forest policy currently in force. It has been highly successful in securing the widespread use of modern efficient stoves that consume fuelwood economically. During the last world war, it secured the utmost nationwide economy in the use of all forms of wood.

But the action of the Association goes far beyond propaganda. Its statutes require that it should promote the improvement of felling and extraction techniques and the organization of forestry work, and so, since 1928, it has had its own technical service under the control of a special commission. This service tries out, checks and produces improved versions of the tools and equipment used in forest operations, organizes training courses for forest workers, and seeks always the most efficient methods of carrying out and organizing timber extraction.

Working in close collaboration with appropriate scientific institutes, the Association, as indicated above, was responsible for the design and introduction of efficient wood-burning heating apparatus in Switzerland and for mass manufacture being undertaken by industry. It took the lead before the last war in advocating the use of charcoal and wood gas generators for automobiles. Thanks to the Association's efforts, automobile operators could obtain, from 1930 onwards, wood and charcoal standardized in price and quality. Also during the war, the Association undertook the training of charcoal-makers, and it revived the practice of barking spruce to derive tanning materials, a practice which had then almost ceased in Switzerland owing to the competition of imported products.

In 1923, the Association set up a trade commission which has much to its credit. On its advice and in agreement with manufacturers' organizations, uniform standards for sawn wood and industrial timber intended for sale, were worked out and accepted. This not only improved the relations between producers and the wood-using industries but enabled price statistics to be placed on an efficient basis. The Association has always campaigned for price stability; besides publishing statistics and giving advice to private owners or interested authorities — particularly on questions of import policy — it has been instrumental in concluding collective agreements between owners and manufacturers; such agreements do not bind the one party or the other (the Association not being co-operative in character), but the agreements, particularly concerning pulpwood — are generally respected on account of the Association's high repute.

Again the Association, together with organizations representing industry and trade, has played a considerable part in the creation of the " Mutual Benefit Fund for Swiss Forestry and Timber Trades." This fund is used to finance projects of mutual interest, such as the setting up of a training-school for sawmill workers, the encouragement of better timber utilization, or the practical application of the results of research.

The Association owes much of its strength to its local influence. It has *Unterverbände* (sub-associations) in each of the cantons into which Switzerland is divided; these work in close collaboration with the parent association, although they enjoy a considerable autonomy. It is interesting to note that of these sub-associations the Selva in the Grisons Canton and the Vaudois Forest Association market products on their members' behalf and hence are co-operatives. Their importance may be judged by the fact that Vaudois Forest Association, which includes among its members the Canton authority itself, 116 communes and 34 private owners, had a turnover in 1952 al nearly 36 million Swiss francs.

Another interesting feature is the close co-operation between the Swiss Forest Economy Association and the Swiss Farmworkers' Union, of which certain of the Cantonal branches are members. Co-operation works through a liaison committee established in 1947; and the Union has more than once helped the Association to get its viewpoint accepted on crucial questions, for instance, on customs dues.

IV. FOREST CO-OPERATIVES

What is a forest co-operative?

The term co-operation is widely used in modern forestry parlance but a variety of meanings are attached to it. For instance, United States legislation making forest fire prevention a combined responsibility of the Federal and State authorities and private owners, speaks of this as co-operation between those bodies and individuals. On the other hand, there are many groups of individuals or public bodies that do not call themselves co-operatives but associations, syndicates, etc., although they present, in fact, all the features of co-operation as it is understood in this section.

A forest co-operative, then, can be defined as a grouping of persons wishing to collaborate to their mutual advantage in order to cope with tasks or undertake operations which a single forest owner would find difficult or impossible to attack with his own resources. It may be added that a further object of the forest co-operative is to furnish direct services to its members in the form of financial aid or practical assistance.

The present law relating to associations of forest owners in Japan lays down that:

> "the object of these associations, and of the federations of the same, is to promote, through the co-operative organization of such owners, the efficiency of forest management and increased forest output, as well as an improvement in the economic and social conditions of the forest owners..."

An act of 1 March 1934 adopted in China and relating to co-operatives in general, defined a co-operative as:

> "an organization set up on a legal basis for the mutual advantage of its members, with the purpose of undertaking business which will benefit all parties and raise their standard of living."

Co-operatives and "sociétés forestières"

The members of a co-operative as a rule invest in the co-operative a certain capital, in the form of shares or subscriptions, to run the organization. Thus far, the co-operative is somewhat similar to a joint-stock company of the type discussed in an earlier section.

There is, however, in another respect a considerable difference between them. In the case of the co-operative, the investment of capital and the highest possible rate of interest thereon are not the essential elements that make the co-operative valuable for its members. The shares in a joint-stock company can usually be freely sold and any individual can, as a rule, possess as large a number as he is able to obtain. On the contrary, the ownership of shares in a forest co-operative is bound up with the ownership of forest land or of a forest enterprise; the number of shares possessed by each member is usually determined by the size of his forest property, and his holding in the co-operative cannot be sold as a normal share can be; and its transference to another person is subject to strict regulations. The distribution of the co-operative's profits is also governed by different rules from those of the joint-stock company; it is based not so much on the member's holding as upon his activities in the running of the co-operative's business and his contribution to its profits. Finally, a forest co-operative is open to all those who possess the qualification required by its articles (e.g., that of being a forest owner), and who wish to profit by the advantages which that co-operative offers. A member may receive one share or several, the number of such shares, generally speaking, not being limited. The joint-stock company, on the contrary, has a fixed number of shares, and a new shareholder can acquire one only by buying from another shareholder who agrees to sell.

It must be admitted that, under some legal systems, some of the features which we have just mentioned as being characteristic of the co-operative are also found in certain kinds of joint-stock companies. Swiss law distinguishes between them chiefly by not allowing co-operative associations to carry over a profit. If the year's trading shows a surplus, this must be shared among members in the following year. It will be seen, however, that other legal systems permit or require the building up of reserves. The Swiss distinction cannot therefore be regarded as generally applicable.

There is, however, a more fundamental difference: in co-operatives it is the *parties* who are merged, not the capital (whether this capital be in money or in material property). Moreover, the benefits of a joint-stock company are bound up with its capital, whereas those of a co-operative lie in an exchange of goods and services.

Co-operatives and forestry associations

As has been seen, the distinction between forest co-operatives and associations of the type dealt with in the preceding section is perhaps less clear-cut. This is because such associations sometimes give their members certain services identical with those rendered by co-operatives.

The difference emerges fairly clearly, however, if it is realized that helping each member to achieve more profitable management of his property or enterprise and furnishing him with efficient services is the *essential* purpose of a co-operative. Co-operatives, therefore, enter directly into the personal business of each of their members. The contract which binds the members of a forest co-operative includes rules laid down by national legislation relating generally to the

organization of co-operatives, or rules established by the partners themselves. In any case, that contract is really a mandate which each member gives to the co-operative to undertake in his name the management of a given part of his personal business. Moreover, the co-operator himself usually has clearly defined obligations to the co-operative.

Possible forms of forest co-operatives

It is clear that forest co-operatives may, within the limits of the definitions given earlier, take very varied forms.

Wherever the internal sectors of a country show profound differences — physical, economic, social or historical — it is a distinct advantage if the law sanctions the widest possible variety and flexibility in the forms which co-operatives may take: for so they can better be adapted to regional differences.

SYSTEMS OF CLASSIFICATION

The provinces of the present German Federal Republic have never (save from 1933 to 1945) been subject to a uniform and highly centralized authority, and the number of units constituting the territory has continually varied: as a result, the forms of forest co-operatives are highly varied. If, therefore, it is desired to reduce to some order all the possible varieties of co-operative which might be envisaged by modern legislation, the German authorities might well be followed in the matter.

M. Endres [2] divides co-operatives into two main categories:

1. *Ownership co-operatives*

These, in the strictest interpretation, are the same as those examined in Chapter II. It is, however, easy to imagine less rigid forms in which, for instance, while the forests are managed as a unified whole, the separate constituent areas remain individual and, under certain circumstances, may be withdrawn from the co-operative. One might also visualize that the owner of each separate area might be permitted to dispose of all the timber standing at the time the co-operative is formed, seeing that the ownership co-operative is usually the form adopted for reforestation purposes in which the landowners contribute bare land to the joint organization, the greater part of the capital required for the reforestation operations being often supplied from public funds.

2. *Economic co-operatives*

In such co-operatives, which form the chief subject of this chapter, each proprietor retains full ownership over his land and its cover. The collectivity confines itself to the development, or to phases of the development, of those elements.

Endres makes a distinction between restricted and full co-operatives. In the restricted co-operative, the responsibility for treating his own woodlands is left with each owner, and in this case the co-operative may be referred to, according to its purpose, as a co-operative for protection, supervision, administration, extraction, or management, the latter being the form which is most strictly binding on the parties. In the full co-operative, on the other hand, the whole of the woodlands grouped in the co-operative are managed according to a common working plan. Each co-operator receives from the co-operative's revenue a return in proportion to the capital value of his land and its forest; the woods, however, remain his property, and he takes personal care of the operations carried out upon his property.

This last form of co-operative is, therefore, very similar to the ownership co-operative.

Another German authority, R. Mascher [3] has worked out a much more complex classification for co-operatives, more from the legal standpoint.

1. *Associations formed under private contract*

(a) *Associations not having juristic status.* Loose in form, usually without contractual obligations, they can nevertheless — in certain conditions and subject to the inclusion of certain clauses in their articles — stake legal claims in civil courts in restricted cases.

(b) *Associations having juristic status.* Among these there is a further distinction between profit-making associations which have this legal status under the terms of their constitution, and non-profit-making associations which acquire the status by being registered. Both can sue in a civil action. Such non-profit-making associations are the Niedersachsen *Forstverbände* whose sole aim is to help their members manage their forests efficiently.

(c) *Partnership associations.* These owe their legal basis in Germany to an act of 1869 dealing with profit-making companies. These registered associations have a juristic status and are distinguished by their being commercial in character and by their activities not being necessarily confined only to fulfilling the needs of their members. They may be of limited or of unlimited liability.

The only forestry association of the third type in Germany is, as far as is known, the *Waldmarkschaft Uelzen* (Hanover). It is, however, a large one; in 1951,

[2] M. Endres, *Handbuch der Forstpolitik*, 2. neubearbeitete Auflage - Berlin, Julius Springer Verlag, 1922.

[3] Rudolf Mascher, *Die Zusammenschlüsse im kleinen Waldbesitz Nordwestdeutschlands, ihre rechtliche und forstrechtliche Gestaltung.* Bremen-Horn, Walter Dorn Verlag, 1954.

its members included 1,776 landowners holding 32,706 hectares distributed over 190 parishes. Originally a tree planting association, this co-operative gives varied services to its members:

(*a*) the direction of silvicultural operations under the supervision of officials assigned to eleven forestry districts,

(*b*) carrying out fellings and silvicultural treatment.

(*c*) organization of measures against fire and diseases,

(*d*) collective marketing of timber from the forests,

(*e*) buying and selling machinery, tools and equipment.

Despite the setback due to the war, the results achieved by this body are notable; from 1936 to 1951, the *Waldmarkschaft* afforested, with very little State help (less than 5 percent of outlay) about 10,000 hectares of land, and timber output has greatly increased.

2. *Associations formed under public law*

These are associations of which the constitution, membership and legal status are governed by public law, while the administration is directly controlled by the State. They are of three kinds:

(a) *Ownership co-operatives.* The origins of these groups go back in history to the early *Allmenden,* similar to corporation forests in other European countries or else derived from associations which have evolved gradually as a result of a variety of circumstances. The largest of these German ownership co-operatives, for instance, the *Murgschifferschaft,* with an area of 5,011 hectares, began in the fourteenth century as an association of heads of forest extraction and floating enterprises who bought forests or, acquiring long-term rights on forest lands became, through various processes, owners of those lands. Although the State now holds 55 percent of the shares in the association and undertakes its practical administration, the co-operative is managed by a board of five directors, and its highest authority is the general assembly of its members.

(b) *Full economic co-operatives.* Ownership rights of members over their lands and forests remain intact, whereas management is in the hands of the collectivity, revenues being shared among the members of the association. This form of co-operative, in north Germany at least, is based upon a law dating from 1875.

(c) *Restricted economic co-operatives.* Members not only retain the ownership of land and forest but may also dispose as they wish of the revenues from their individual forests. These co-operatives also owe their constitution to the terms of the 1875 law, in addition to a 1943 regulation on forestry associations.

These two systems of classification of co-operatives, although framed to suit conditions in what is today the Federal German Republic, would appear to cover fairly adequately all forms of forest co-operatives likely to be encountered: naturally, some forms tend to be predominant in certain countries, and others may not occur at all, depending on national legislation and historical evolution.

This is historically noticeable in Germany. In Bavaria, for instance, where there were 75 co-operatives in 1954, aggregating 30,000 members and 125,000 hectares of forest, almost all associations were of the looser kind. In Baden, on the contrary, all the 55 forest co-operatives aggregating a total of 9,413 hectares were ownership co-operatives. In north-west Germany the most varied forms existed side by side.

A survey of these German co-operatives elucidates an interesting fact: the individual co-operative — and the ownership-co-operative in particular — often covers a very small area, sometimes less than 100 hectares, which would elsewhere be regarded as small for a forest unit. Another fact, already mentioned but which must be emphasized, is that, apart from the former *Allmenden,* the formation of co-operatives seems to have been, and still seems to be, quite easy when the aim is the afforestation of bare lands. The group of *Forstverbände* of the northern part of Lower Saxony, which together make one of the largest German associations, is a case in point. Constituted for the purpose of reforesting the Lüneburg heathlands, they aggregated, in 1953, 8,500 owners and 151,000 hectares, the average area in each association being 3,800 hectares. Here, however, the bodies are only economic and not ownership co-operatives.

An exceptional example

However detailed a system of classification is adopted, it is difficult to make allowances for all the varieties of co-operative which may be in existence. One example that does not fit neatly is enlarged upon here because it suggests a form of co-operative that might profitably be used in tropical countries with some necessary modifications.

The Kangra District in the Punjab (India) covers an area of about 650,000 hectares, half of it forested. The extremely rugged locale is dominated by the Dhoula-Dar mountain chain which rises to 4,500 meters. The district is relatively densely populated with about 385 inhabitants to the square kilometer, living in very small villages scattered throughout the forests. They are chiefly engaged in agriculture but the area of cultivated land available does not suffice for their sustenance, so that stock-raising has increased out of

all proportion to the available grazing-land. Over-stocking, aggravated by nomad practices, has caused serious damage to the soil and to the forests which, however, include valuable stands of conifers.

Before the advent of the British a feudal system prevailed, the inhabitants of the villages enjoying all the products of the forest land without, however, owning the land or its vegetative cover. After British rule started, measures were introduced to protect the forests and to promote the spread of tea-plantations in the district. The forests — leaving aside a very small area of private forests — were divided into four categories. The smallest sector, the Ban Muafi forests, made up much less than 1 percent of the total area. It included forest lands belonging to village communities, and the Government, which managed them, could not, however, forbid grazing in the forests without the consent of the owners. Next came the "reserved" forests (2.5 percent of the total) on which lands and cover belonged to the State. The greater part of these consisted of "protected" forests (73 percent) and "unclassified" forests (24 percent) on which the land belonged to the inhabitants and the trees to the Government; the chief difference between the two kinds of forest being that in the former the Government could prohibit grazing, whereas in the latter it could not do so without the consent of the local people. In all forests, most of the villagers had timber-usage rights.

Abuse by overcutting and overgrazing ended in terrible catastrophes which forced the Government, in 1939, to seek the co-operation of the villagers in establishing effective control of cutting and grazing practices in these forests. It was decided to authorize and encourage the setting up of co-operatives within the territory (*mauza*) of each village. These co-operatives were to be entrusted with the management of any Governmental forests on their territory on condition that the inhabitants agreed to subject all forests on that territory to a regular management plan.

The scheme now covers reserved, protected, unclassified and Ban-Muafi forests together, and private forests on the territory can also be covered if the owners so desire. The forests are all administered for the benefit of the community, both for people enjoying usage-rights and those who do not. The management plans, including the defining of prohibited areas, are laid down by forestry officers of the Kangra Forest Societies Division, a branch of the State Forest Service specially created for the purpose and for giving technical assistance to the villagers.

A society can only be set up with the assent of three-quarters of those enjoying usage rights. It is officially registered, and is responsible for forest protection and for improvement or other operations to be carried out. It appoints its own forest wardens. The Government gives financial aid to those societies unable to meet all charges out of forest revenue. It retains ownership rights over the soil and the trees or over both according to the particular case, and also reserves the right to extract resin from the trees, since tapping formerly caused severe damage. But all forest revenues, whether from the sale of timber or of resin, or from grazing rents, are passed back to the society concerned.

After some hesitancy on the part of the local inhabitants, the number of societies grew rapidly: 70 were set up between 1941 and 1945, aggregating 33,000 hectares. During this period it had not been possible to supply more than 40 societies with management plans, but over these 40 *mauzas* about 6,000 hectares had been successfully closed to grazing, as against 700 under the old system.

Remarkable results have been achieved. Natural regeneration has made great progress. On forest grazing lands, the cover of forage plants has improved considerably. Several tree nurseries have been set up by the Government. Apart from the fairly large revenues paid over to the societies (84,000 rupees for the financial year 1944-45), there have been wider possibilities for employment in the forests in course of rehabilitation, the assurance of protection for the villages and cultivated lands, and the improvement of grazing, meaning better feeding for animals and better nutrition for the people.

Legislation on forest co-operatives

The peculiar nature of co-operatives makes it incumbent that certain legal restrictions be placed upon them to protect individual members. On the other hand, co-operatives are such a valuable instrument in the economic development of small private forests, that legislation should also be such as to encourage their formation.

Compulsory and voluntary co-operation

There may be a strong temptation to make the formation of co-operatives compulsory. In this connection, the history of the development of forest co-operatives in Japan is instructive.

In that country, the emphasis in the formation of forestry associations has always been laid on common action for the efficient management of forests belonging to members of the association, on protection against fire and against destructive cutting, on replanting, and on improvement cuttings. Certain associations with this for purpose, and usually composed of neighboring forest owners in part of a parish, were in existence long before the first legislation on forest co-operatives was passed in 1907. Side by side with these, and often of much earlier origin, there were, in some regions, associations of loggers and timber industries. This movement saw its greatest development between 1880 and 1905. Then the associations were simply authorized by the Ministry of Agriculture on the advice of the

governor of a prefecture, who was responsible for seeing that the associations' internal statutes and regulations were fair. There was already a distinct tendency to make the associations compulsory, at least under certain circumstances.

The 1907 Act relating to forestry associations was, however, liberal in character and intended to encourage the establishment of as wide a number of associations as possible: it provided for their constitution in the most varied branches of forestry, from the common management of all forests belonging to association members to the execution of special works, the sale of products or the extraction or processing of timber. This legislation fostered a rapid increase in the number of associations and, from 1927 onwards, about 150 new bodies were formed each year.

Alarmed at the increased rate of felling and fearing that the already depleted forests could not deal with the large demand for timber, the Government established strict control over felling operations between the years 1930-35. This control was further strengthened in 1936 when cotton imports from India were suspended and the manufacture of artificial fibers in Japan was considerably extended, requiring an increased output of woodpulp of about 400,000 tons.

Forest legislation was therefore revised in 1939, with the aim of stimulating timber production while still insisting on sound silvicultural methods. Given the country's forest-ownership pattern, this could only be achieved by concentrating control in the hands of a central government forest service. It was absolutely necessary, however, to obtain the co-operation of local governments, towns, villages and, lastly, forestry associations. It was a short step from this to make the forestry association legally the final link in a bureaucratic chain. The association was no longer to be solely for the benefit of its members; it became an organ of control, and hence the formation of associations had to be compulsory. The 1939 law, in fact, provided for three possibilities:

1. voluntary association;
2. a formal association within a given territory, adherence becoming compulsory once two-thirds of the interested parties, holding at least two-thirds of the forest area concerned, decide to set up an association;
3. compulsory association by order of the local governor.

In practice, results were poor. Much of the lack of success was probably due to the excessive control made necessary by the then state of war. But if the policy adopted by a Government involves a too strict control by government departments over private forests, and if the co-operative's main function is to serve as an instrument of that control, then it loses attraction for the forest owner.

The organs of control created by the Japanese Government before the last war have since been dissolved; and the forest co-operatives reorganized on a liberal basis in accordance with the new forest legislation of 1951. This has not meant, however, that the State no longer exercises strict control over cutting in private forests: quite the reverse. What it does mean is that the formation of co-operatives is no longer compulsory, and can no longer be made accessory to that control.

The principle of voluntary constitution is in general observed in other countries where forest co-operatives have been developed; although there are certain kinds of co-operative created for special purposes which are obligatory or semi-compulsory. For instance, associations for floating timber down rivers are compulsory in northern European countries, arising from the fact that some semi-official institutions are involved in this kind of operation. In the same countries, associations for the building or maintenance of forest roads can be made compulsory.

In other countries, particular associations formed for carrying out special projects like road-building and drainage can be made compulsory for all owners within a given area, if a certain proportion of owners request that such a step be taken.

Regulations covering co-operatives

Legislation relating to co-operatives, as has already been said, includes safeguards for the interests of the co-operators.

Members' liabilities

One important question is: What are the members' financial liabilities if the association should sustain losses? In Germany, for instance, the original laws provided only for the creation of unlimited liability associations, but an amendment in 1889 provided for the constitution of limited liability associations. In the former case, individual liability of members extended to the sum total of their properties; afterwards, their liability was restricted to a multiple of their total share-holding in the association. The Austrian law of 1873 recognized from the start the principle that liability could be either limited or unlimited. In 1918, the law as it related to insolvent associations and members' liabilities was revised in order to protect members against creditors, and the associations were authorized, in the case of insolvency, to arrive at an amicable settlement with their creditors out of court. In 1920, legal sanction was even given to associations without liability but not in the fields of agriculture or forestry.

Generally speaking, the liabilities of the members of forest co-operatives are limited. In northern European countries they are even limited only to the number of shares in the co-operative held by members, although there are certain exceptions.

Naming the association

The Austrian law requires that the purpose of co-operatives and associations must be set out in their articles, and must clearly emerge from their titles. In this way, intending members shall not be misled, and any tax exemptions applicable to such associations can be easily determined.

Membership qualifications

The law also lays down generally the qualifications for membership of an association. Regarding co-operatives, and forest co-operatives in particular, the rule is that membership is open to all, subject to any restrictions specified in the articles (themselves subject to legal approval). The latest Swedish legislation particularly emphasizes the principle of unfettered membership and points out that an economic co-operative cannot refuse a request for membership unless for some special reason connected with the kinds of activities or aims pursued by the company, or other reasons of a similar kind.

Current Japanese legislation goes more thoroughly into this matter. It must be pointed out, however, that it distinguishes two kinds of forest owners' associations. The first is the true co-operative in the sense adopted in this essay and which Japanese law refers to as a facilities association. Its object is:

> "to help each member to devise a scheme for administering or managing his forest and to give it correct treatment; the association may accept from a member a mandate whereby the association itself undertakes the management, or both the management and treatment, of that forest, and all activities accessory thereto."

The second type, called a production association, is formed for the specific purpose of managing a forest (over which the association therefore exerts genuine property rights or at least usufruct rights) and of conducting operations accessory to this purpose. Membership of the "facilities association" is open, subject to restrictive clauses in the articles, to:

> "1. forest-owners;
>
> 2. all other persons whose business is connected with the forest and who are held capable of using the facilities offered by the association concerned."

This second category of members would probably apply to small forest operators, charcoal manufacturers, nurserymen, owners of small sawmills, etc. The law, however, excludes this second class of persons from voting rights in the general assembly of an association and from being elected as officers. Membership of the production associations is open to:

> "1. any individual living in the area covered by the association;
>
> 2. any individual making an investment in kind in the shape of a forest situated in the association's area or of any right he holds in such a forest."

It will be seen that this second form of association bears a closer resemblance to the associations examined in Chapter II than to the true co-operatives, for the object is the administration of a forested area contributed by its members or which the association itself has been enabled to buy and develop, owing to the investments of persons who, though residing in the locality, are not necessarily forest owners. The law, however, places limitations upon the formation of this second kind of association, for it requires that at least one-third of the persons living in the association's area, and engaged in the pursuits with which the association has to do, must agree to joining it before the association can be formed. Moreover at least two-thirds of the members of the association must be engaged full time in the pursuits with which the association is concerned. These two provisions are obviously designed, first, to guarantee that the association shall have an adequate forest area to administer and will not clash with other forest owners or associations of forest owners; and secondly, to ensure that the association will not be dominated by purely speculative interests.

It is conceivable that the articles of an association might exclude from membership owners whose interests were too much at variance with those of the average member. There is no doubt, for instance, that the big forest owner cannot have the same motives for taking part in a co-operative as the small owner — even though his interests may not be directly opposed to theirs. In Austria, it has been found that the pressure exercised by the big owners has often had a deadening effect. In the United Kingdom, on the contrary, it is considered desirable for the big owners to join and take an active part.

Again, there are some professional persons who might seem undesirable as members of a co-operative — a logging contractor, for instance, is perhaps out of place in an association whose activities cover just this field. Japanese law, in fact, forbids membership to such persons, and even to legal representatives of another corporate body engaged in the same field. In the United Kingdom, on the contrary, such persons are usually regarded as useful assets; it is held that the prime object of an association is not to enter into competition with commercial and industrial undertakings, but to lower costs by efficient methods of production, a matter which is of interest to all members.

Resources, outlay and profits

The resources of a forestry association come initially mainly from the fees paid in by members, these fees being fixed, as a rule, by the articles of the association. Sometimes, however, the law carries stipulations in this respect, as it does far more commonly in regard to the

distribution of the profits made by the association once it is functioning.

On this point, attention is drawn to the system now in use in Finland. In pursuance of the Forestry Association Act of 27 November 1950 and the order relating to forestry associations of 13 July 1951, every forest owner is obliged to subscribe a certain sum to the local forestry association. He then automatically becomes a member and can use the services available to members. The amount of the contribution is fixed each year by the association itself, but it must lie between 2 and 6 percent of the value of the parish rates and taxes. The only persons exempt from contribution are the owners of forests with a yearly output below 20 cubic meters, but these too may voluntarily become members by paying the appropriate contribution. The State itself must pay the contribution if it holds forest land in the association's territory, but the State contribution is only a quarter of the normal fee, and the same applies to owners who undertake to manage their own forests themselves. If they wish to become active members of the association, however, they must pay the full contribution.

The parish authority collects the contributions and keeps the accounts, and after deducting 2 percent for its own expenses, pays over the balance to the association. Where there is no local association, contributions are still levied on all the owners concerned but they are paid to the District Forestry Board.

The Finnish system is, therefore, to a certain degree tantamount to a compulsion to join, or at least contribute to the cost of running an association or co-operative. Although the measure seems to be applied to forest co-operatives only in Finland, the same principle obtains elsewhere. In France, for instance, it is applied in the case of Chambers of Agriculture, which are partly run through contributions proportionate to the land tax and payable even by owners who do not use — at any rate directly — the Chamber's services.

National legislation usually includes provisions relating to the profits made by co-operative associations. Profits are not, as a rule, distributed in proportion to shares held but to the business done by each member through the agency of the co-operative. There are, however, many cases where co-operatives do business related to their normal activities with persons other than their own members. Even apart from this, the commission, however small, received by the association on each business deal, may result in an appreciable profit after deducting the expenses. Such profit must then be distributed among members according to their shareholding; but the law often requires that the financial position of associations should be strengthened by transferring part of the profits to a reserve fund. In Finland, at least 10 percent of annual profits; in Sweden, at least 5 percent, must be so set aside. In Japan, at least 5 percent must be reserved from one year to the next to pay chiefly for purely silvicultural operations.

The law usually requires the public authorities to keep some check upon the financial affairs of co-operatives, as well as to see that their activities are conducted generally in keeping with the law and their own articles. In Japan, administrative authorities are empowered to demand from associations details of their membership, officers, employees, turnover, and any other matters pertinent to the proper conduct of business.

In Austria, inspection of the associations every two years has been compulsory by law since 1903. The law names three authorities which may carry out the inspection: the inspecting institutes (or unions), the federal authorities, and the *Land* (or province). In 1934, permission to form an association was made conditional upon the association's membership in an inspecting union recognized by the State, and in 1936 any existing associations not belonging to one of those unions were required to make a request for membership.

Special regulations are usually applied to credit, mutual assurance associations, etc., their financial activities being more complex.

In this connection, Japanese law again differs in having a provision which approximates some kinds of forest associations to joint-stock companies. It is obvious that the annual profits of production associations must be distributed according to the number of shares held by each member. The dividend on each share, however, is limited to 10 percent, and any surplus over and above this is distributed in accordance with the activities of each member. Moreover, even facilities associations can invite their members to invest in the association by buying shares which cannot be transferred without the association's approval, and then only to other members of the association. These associations are known as share associations. The financial liability of any member is limited to his share-holding, and if he should be expelled from the association, he can claim full compensation. When a facilities association is also a share association, the articles of foundation can lay down how the profit shall be distributed, but the annual dividend must not exceed 5 percent of the total investment of each member.

Internal organization

Matters of the constitution and management of co-operatives are also covered, at least in outline, by legislation.

The minimum number of persons entitled to form a forest co-operative is usually fixed. In Sweden, for example, it is five, but may be only three if those persons themselves represent societies. The number in Japan is ten in the case of facilities associations, and five in that of "production associations." Japanese law even goes into detail regarding the procedure to be adopted for meetings of founder members, for the drafting of the association's articles, and for the holding of the first general meeting to approve the draft.

The law rules what the articles must include: the precise objects of the association, its style and title, its office-address, the geographical area it is intended to cover, its duration (if that is limited), the conditions

governing the admission and expulsion of members, and the procedure whereby the organization may be dissolved.

The number of shares created, their value, and, where necessary, the maximum holding permitted to a single member, must be stated; how the association's accounts are to be kept and audited, how profits shall be calculated and reserves determined, the conditions governing the distribution of profits and losses, and the nature and extent of the liabilities of the members.

Finally the articles must state how and by whom the association shall be managed. As a rule, a general meeting of members takes overall decisions and decides policy. The articles must state the conditions under which general meetings shall be called, who may vote and how decisions are to be taken. Direct management must, however, be in the hands of a board of directors, and the articles must specify how these directors shall be appointed and their precise duties.

These various points are not, of course, usually left entirely to the association's discretion; in other words, while the association may draw up its own articles, it must frame them within certain limits.

For example, the law sometimes specifies members' voting rights in an association's general assembly. It may also lay down the matters which must be decided by the general assembly, defining the powers of the assembly and of the board of directors; it may specify the minimum of votes needed to carry a motion, as well as the quorum necessary to make a decision valid; it may reserve to a general assembly the election of directors, and limit the term of their appointment; it may also cover the appointment of auditors, and the fees and duties of both directors and auditors.

Finally, the law may define the authorities competent to approve an association's articles. Under Austrian law, the articles and any changes thereto must be entered in a register of associations kept by the Chamber of Commerce. Japanese law sets out in detail the procedure for submitting the articles for official approval and for notifying the interested parties that approval has been given.

Privileges granted by the law to forestry associations

The small forest-owner who joins a co-operative is most attracted by the short-term financial benefits he may derive by selling his timber under more favorable conditions, by being able to buy the material and equipment he needs at lower prices, or to borrow money for forest operations at cheaper rates. Hence forest co-operatives will be the more attractive to forest owners the greater the material gain they lead them to expect.

Taxation

There is one simple way of enabling co-operatives to increase their money yields: that of exempting them from some of the burden of taxation falling upon individuals or corporate bodies. It would, indeed, be unfair for a member of a co-operative to suffer double taxation: once as the owner, say, of timber sold through the agency of a co-operative, and again as a member of that co-operative. On the other hand, it is quite regular for a co-operative to be taxed on the profits it makes which are distributed to its members in proportion to the shares held.

The schedule of taxation applied to forest co-operatives can tend, therefore, to encourage their increase and efficacy.

In the early days of the formation of forestry associations in Austria, there was a general tax on the profits of all enterprises which were obliged to make public their balance sheets — such as joint-stock companies, credit institutions and savings-banks. Certain associations, however, were exempt from this tax, namely mutual credit and deposit associations if operations did not exceed a certain figure and were confined to their own members whose liability was unlimited; agricultural supply co-operatives for purchasing seed, fertilizers, machinery and equipment, on condition that the net profits were not distributed; and lastly, farmers' selling co-operatives for marketing produce. These exemptions naturally also applied to forestry associations.

There were also associations which were granted tax-reductions on turnover, or even complete exemption, but this was a privilege usually restricted to certain small associations.

The privileges granted today are that associations pooling their members' products or goods for sale purposes, are exempt from tax on condition that the associations' dealings are confined to the products or goods belonging to their members. They pay full taxes on income obtained from dealings with non-members. This concession is highly important to those forestry associations which buy only members' timber and resell it for use in the round or as sawlogs. Credit associations are less favored; they pay one-third of the normal tax on turnover, subject to their operations being confined to dealings with their own members.

Sawmills are considered in Austria as industrial undertakings and are accordingly subject to industrial taxes. If, however, a forest owner possesses a sawmill and transforms his timber into sawn wood, he is exempt from this industrial tax on condition that he does not enter also into the manufacture of processed goods. Such exemption also applies to sawmills owned by forestry associations dealing mainly with timber from members' lands.

The tax privileges granted to co-operative societies in northern European countries, however, appear more substantial. In Norway, no taxes are levied on profits made by forest co-operatives from their normal marketing activities. The only taxable profits are those realized from the sale of timber belonging to non-members, and from the primary conversion of the timber. But special prices are charged for roundwood delivered to co-operative conversion plants so that the

profits on this kind of operation are practically nil. It is rare for there to be dealings with non-members. Finally, these associations pay no tax on capital or income save on any reserve fund established. The tax here is calculated on a hypothetical income assessed at five percent of the capital constituting the fund. But since the tax is progressive and the reserve funds are retained by the individual associations themselves (and not by the federations of which we shall speak later), taxation does not in the end amount to much.

In Sweden, industrial and commercial companies pay taxes amounting to 32 percent of their profits. There is no tax on invested capital, although each member of a company must declare his investment in the company to the taxation authorities. This is a high rate of taxation but, in practice, so-called open companies, i.e., those in which membership is unlimited (as is the case with forest co-operatives), do not pay tax on that portion of their profits which, in accordance with co-operative principles, is distributed to members, even if this distribution is made only after the balance of the accounts has been declared.

This system has led Swedish co-operatives to make fairly substantial capital investments, the members being required to provide contributions for this purpose and the contributions in turn often being obtained by deductions from the annual sums due to co-operators as their share of the profits. Swedish law, however, does compel co-operatives to transfer 5 percent of their profits to the reserve fund. The Norwegian system of taxation, on the other hand, encourages co-operatives to build up considerable reserve funds rather than make capital investments.

Loans and subsidies

Privileges in the matter of taxation are, however, not the only kind of financial aid which the State can grant to assist the formation and working of co-operatives. Small forest owners, whom the co-operatives aim to help, rarely have sufficient means available either for working capital or for operations. This may be remedied in two ways:

1. by granting subsidies to co-operatives for operations or works that are of public value;
2. by facilitating loans on advantageous terms, easy repayment being especially important in forestry where long-term investments are involved.

It is, of course, possible to combine subsidies and loans.

In northern European countries, forest co-operatives only rarely receive subsidies and then for special purposes. The system of compulsory contributions previously described normally replaces subsidies.

Subsidies are commonly granted in France and Italy, but usually in combination with loans, and only in virtue of the kind of works undertaken. Subsidies are reserved for works which are of greater advantage to the national interest than to the private interests of the owners who co-operate in carrying them out; while loans are made in the contrary case.

In the case of loan or credit co-operatives, governments usually act as guarantors. The *Svenska Jordbrukskreditkassan*, or Swedish Federation of Rural Loan Societies, can call upon a basic fund of 25 million kronor in treasury bonds. Central loan societies receive treasury bonds to cover 20 percent of their commitments, with a minimum of 100,000 kronor and a maximum of one million for each society. In Norway, the farmers' short-term credit society (*Centralkassen for Bøndenes Driftskredit*) receives privileged terms from the State Bank and is thus able to grant loans in its turn to forest owners and their associations.

In both Finland and in Sweden, co-operatives engaged mainly in providing credit facilities for members can be specially authorized to undertake banking transactions themselves under certain conditions. This is regarded as being of particular importance in that they make loan societies less dependent upon borrowing from ordinary banks.

In the United States, the forest co-operative movement, as understood in this chapter, is little developed. A reason frequently advanced for this fact is the lack of credit facilities for furnishing working capital. The 1948 reappraisal of forest conditions in the United States devoted a whole section to forest co-operatives. Enquiries had shown that most of the co-operatives then existing had received some financial aid at the outset, besides technical help from officers of State or Federal forest services. This aid had generally been given as a result of special legislation and in the form of loans, mostly small, from the Resettlement Administration or the Farm Security Administration. The reappraisal considered that the credit facilities granted to farmers' co-operatives in general did not entirely meet the needs of forest co-operatives.

After the last war, Japanese co-operatives of all kinds were generally in a precarious financial position. In 1951, an Act provided for State development loans every year for five years to any co-operative that would guarantee to put its financial affairs in order, in conformity with certain principles. The act in effect committed the Government to paying the interest on associations' debts during the rehabilitation period; and the magnitude of the scheme may be judged by the fact that the total budgetary estimate was U.S. $ 61 million, of which 20 percent was for forestry associations alone. The Act has now effected a slight improvement in the situation of forest co-operatives; apart from a few shining exceptions, most associations had debts averaging eight times their capital, while now the figure is six times their capital.

Independently of this legislation, a credit bank for agriculture, forestry and fisheries was created in 1953. This is a State organization, the capital being entirely met out of budget resources, and its profits return to the State. Loans granted by the bank depend upon

the kind of works to be undertaken; for regeneration operations the interest varies from 4.5 to 6 percent, and repayment extends over 15 to 20 years, the first instalment being payable only at the end of two to five years. The bank also grants loans to forest-owners prohibited by current regulations from cutting their stands because the latter have not yet reached the normal rotation age. The interest on such loans is 4 percent and repayment is extended over 25 years. Any forest-owner is legally entitled to such loans but, in practice, more than 90 percent of them are granted to forestry associations and federations of associations, which, in turn, share them among their members.

The different fields of activity of forest co-operatives

Forest co-operatives may be formed with the object of assisting their members in any operation relating to forest management, from the drawing-up of management plans or working plans to the marketing of primary forest products.

On the other hand, they may restrict their activities to certain clearly defined objectives, such as selling standing or felled timber, or building forest roads. Even when the articles of an association provide for engaging in all forestry pursuits, in practice, some will predominate.

MARKETING FOREST PRODUCTS

One of the most common activities of forest co-operatives is the marketing of primary forest products, and many people regard this as their most useful function. There is, indeed, no doubt that receiving good money for his timber stimulates an owner to improve his output.

Other people, while agreeing with this, still think that where marketing of products is the co-operative's sole activity, it is likely to do more harm than good, for it encourages the small owner to sell his timber before it is mature — timber which, with a little patience, could yield more useful commodities and a much better return. These conflicting views show how closely the whole subject of forest co-operatives is bound up with local conditions. The creation of co-operatives simply for marketing might indeed be harmful in a country where the management of private forests is not subject to any control by the government forest authorities. Where such control does exist, the co-operative will facilitate the exercise of it, and, to the extent the owner benefits from the co-operative, the more likely is he to accept that such control is necessary and important.

At all events, in those parts of Europe where forest co-operatives are most highly developed, their growth has been fostered by the need to organize small owners to counterbalance associations of buyers of forest products. In northern countries, there were a few sporadic attempts to set up marketing co-operatives in the eighteenth and nineteenth centuries. Again, at the beginning of the twentieth century, difficulties were encountered in setting up efficient selling organizations, and societies mainly restricted themselves to giving technical advice, although the internal regulations of the early Norwegian societies stipulated that they should keep members informed of market trends, help them in buying and selling forest products, and guard against any over-production which might harm members' financial interests. In Finland, associations did not become active in the commercial field until the foundation of the Central Owners' Society (*Metsänouristajain Metsäkeskers*) in 1921. Similar activities began in Sweden in 1927 and in Norway in 1929.

The general slump of 1930 brought a sharp fall in timber prices and gave fresh impetus to marketing co-operatives; in the years 1930-1940, they were to be encountered in every part of Norway and Sweden. During and after the second world war, they played an important part in maintaining fuelwood supplies, and enhanced by this circumstance, their prestige grew still more in the subsequent years of expanding demand and rising timber prices.

SILVICULTURE AND MANAGEMENT

Often trading is not the major activity of forest co-operatives. In Japan, for instance, the most progressive co-operatives are those which furnish the necessary facilities for improving forest management and productivity. The most common facility so provided is the building and upkeep of forest roads, which again shows how the activities of co-operatives are influenced by local features, because Japan is a mountainous country and accessibility of forests is a particularly acute problem. Road-building is greatly encouraged by the fact that State subsidies furnish 50 percent of the outlay and local authorities 10 percent, the rest of the cost being shared by the forest owners in proportion to the benefit they derive.

Next to road-building, the activity most commonly pursued by Japanese co-operatives is the raising or purchase of tree seedlings. They distribute about 50 percent of all the three-year-old plants of forest species raised in the country. Here again, the State helps by collecting seed from the national forests, running nurseries, and distributing one-year-old seedlings to local authorities. Transplanting is done under strict supervision by private nurserymen or by the forestry associations. This procedure is obviously of public interest, since it enables the forest authorities to keep a strict control over the provenance of at least a part of the material from which the country's future forests will grow. It has been proposed that such control shall be exercised throughout the country.

Trading in forest products is a minor activity in the Japanese co-operative movement. The volume of sawtimber passing through the hands of the associations in 1952 was only 1.3 percent of the total volume produced. The co-operatives' dealings in charcoal are

equally insignificant compared with the total output, although such trade should be profitable. Farmers' co-operatives, which absorb considerable quantities of charcoal, offer some competition in this field. In fuelwood, too, the forest co-operatives' dealings are on a very minor scale.

Although social and economic conditions are very different in the United Kingdom, there also the forest co-operatives seem to place emphasis less on marketing than on silvicultural operations. Private woodlands in Britain have in very many cases been exhausted by excessive cutting in two world wars, and now the owners' chief concern is mainly the afforestation of denuded land or the reforestation and rehabilitation of existing woodlands. These operations, moreover, are subsidized to some extent by the State. The co-operatives to carry out such work, formed under the Industrial and Provident Societies Act are usually assisted by the State forest service, known as the Forestry Commission; they buy equipment, seed, young plants, etc., obtain the services of skilled workers and put all these facilities at the disposal of members, together with technical advice and guidance. Where the co-operative, as contractor responsible for the work entrusted to it, has not sufficient manpower or means of its own, it can call upon sub-contractors. The co-operative's employees are often engaged in cutting and preparing minor products like stakes or even fuelwood because, while it is comparatively easy for an owner to sell valuable trees on the stump, such minor products find few buyers unless they are prepared for sale beforehand. Harvesting of such products is often ancillary to good silviculture, and local labor, scarce in the woodland areas of the United Kingdom, is often unobtainable for this kind of work.

Manpower and workers' co-operatives

In the case just cited, one of the advantages presented by the forest co-operative lies in its providing labor for the members. In workers' co-operatives, however, the members are employed by their society on the same basis as any other regular wage-earners, while helping owners to sell their timber. It has already been seen that some Japanese co-operatives are empowered to accept members who are not themselves forest-owners; they may be small forest operators, charcoal-burners or forest workers employed in the forests incorporated in the co-operative. But an interesting case has been reported in *American Forests*[4] where the labor is supplied by the members of the co-operative, themselves owners of small woodlots. It concerns a small co-operative, the Au Sable Forest Products Association, started by a ranger in the State of Michigan in 1940.

Organized under the regulations of the Michigan Corporation and Securities Commission, this association started off with a very small loan of $3,000 from the Farm Society Administration which enabled it to begin operations. Its purpose was to exploit the timber — chiefly pulping timber — distributed on small woodlots, split up into parcels too small for the timber to be sold from them separately. The manpower was supplied by members of the association working singly or in family groups; but the cut was pooled and sold *en bloc* by the association. The return from sales was only $ 3,200 in the first year, and from that the actual workers had to be paid. But the association's revenue, with ups and downs from seasonal variations and market fluctuations, has steadily grown; in 1952 it was $ 247,900, and in 1954 about $ 300,000. The association now has a permanent manager and secretary-treasurer; the forest operations have contributed a considerable element of stability to the community because well-paid, part-time or full-time work has been ensured for the members of the association. Finally, the association has made possible the development of an area of forest land which would otherwise have been of scant profit either to its owners or to the community.

Other associations owe their existence not to the grouping of members' forests but of their skills. Attempts have been made in many countries to form forest workers' co-operatives of this kind. They are difficult to get started, for they need a fairly large initial capital, not only for the purchase of tools and equipment, but more especially for the organization of actual felling operations. The seller of a crop of standing timber naturally demands, even under the most favorable conditions, if not an actual advance down, at least a guarantee for his money, which the co-operative cannot easily supply. Recourse to a loan will equally require a guarantee, and will place a burden from the start on the co-operatives' funds. In areas where forests are State-owned, conditions may be favorable, so long as the national forest services are not tied by too stringent regulations on the granting of rights to fell or sell timber.

It is in a country where such conditions are fairly well fulfilled — India — that interesting attempts have been made in recent years to set up organizations of this kind, especially in the States of Bombay and Madras. The co-operative movement is fairly well developed in India, especially in the two states mentioned, where co-operatives are reported to extend over 93 or 65 percent respectively of the villages. Attempts have been made to organize forest workers into co-operatives, especially the indigenous tribes often used as a source of labor by felling contractors. The State of Bombay's first five-year plan included, as one of the features of its social policy, the organization of forest co-operatives among native tribes. The forest service was deputed to assist the tribes to group themselves, and was required to detach specialists for the job. The experiment succeeded; from a single forest co-operative in 1947-48, the number had grown to 58 by 1953, and the value of the products they dealt with amounted to 1,794,000 rupees (about U.S. $358,000).

[4] A. H. Carhart: Woodlot owners may find the answer to their own problems in the co-operative approach of Michigan residents, *American Forests*, April 1955.

The government brings all its weight to bear on the encouragement of these co-operatives. In the State of Bombay, the Adivari (native) co-operatives are placed under the auspices of departments which are nothing less than social services, supervising the co-operatives' activities and acting as intermediaries between them and the various ministries which have to be dealt with. Membership of such co-operatives must be at least ten persons and must not exceed one hundred. Members' subscriptions may be either one anna for every rupee of their wages (16 annas = 1 rupee) or a quarter of the share of profits due to them according to the articles of the association. The subscriptions are converted into shares of which no member may hold more than 25. Moreover, the co-operatives' working capital is supplied by a Central Loan Agency, a para-governmental organization, whose loans are partly backed (up to 40 percent) by the State. Finally, felling contracts are granted at prices at which the co-operative can expect to make a profit of at least 10 percent. The co-operatives are also exempt from payment of sureties and advances before being awarded a felling contract and they are helped to market the felled timber as profitably as possible. If there is a profit upon this, the State takes 50 percent but it also bears 50 percent of any losses.

The Bombay Government's experiment may be compared with a scheme promoted by the forest-owning communes of the Haut-Rhin Department in France.[5] Here shifts in population and changes in economic and social conditions had led to the progressive lowering of living standards among the farm workers partly employed in forest work; and to remedy this situation the communes set up intercommunal syndicates for forest management. The object was to organize:

> "teams of skilled woodcutters, highly trained and equipped, mechanized and motorized so that they can operate over a wide radius and thus be able to ensure that felling operations in all the forests belonging to the syndicate's member communes are carried out in the best possible conditions."

In Norway, teams of forest workers, organized in the villages, are ready to lend their services to any small forest owners in the community. This scheme is becoming increasingly popular; and a similar movement is reported from Finland.

These organizations are not, strictly speaking, workers' co-operatives. But here too, the dividing line between true co-operatives and other forms of association is far from rigid. It may, for instance, be recalled that there have long existed in many Italian Alpine villages teams of forest workers, led by one of their own number, who hire out their services to sawmills or felling contractors both locally and in neighboring countries. These groups may have no capital; sometimes even their traveling expenses are paid in advance by the enterprises that employ them. While their organization can hardly be called a co-operative, it is a form of co-operation inasmuch as it enables its members to protect their interests more effectively, to find work more easily and to achieve a higher standard of living than if each individual was left to his own devices.

Similar groups of workers are reported to exist in the Saskatchewan Province of Canada; a so-called co-operative of Indians obtained from the Saskatchewan Timber Board in 1951 a felling contract at McDonald Bay, 30 miles from their home town. In Quebec Province there were, during the winter of 1948-49, 43 groups of this kind, totaling 3,000 members and belonging to five regional unions which, at the end of 1949, set up a federation of workers' co-operatives.

Besides these groups, Quebec has co-operative syndicates of forest workers which are co-operatives in the true sense, for they themselves purchase felling-rights and cut, transform and sell timber without employing middlemen. Again during the winter of 1948-49 there were 24 syndicates of this kind, totalling 1,200 members, with a business turnover of Can. $ 847,000.

Information about co-operatives in Soviet Russia goes back to 1938. At that time, the All-Russian union of forest workers' co-operatives and co-operatives of workers in the timber industries comprised 4,500 co-operatives grouped in regional units. They were associations of skilled workers, engaged either in forestry proper or in manufacturing articles of wood, especially furniture. About three-quarters were within the Russian Soviet Federated Socialist Republic, and about 90 percent were centered in the countryside where very many of their 400,000 members combined farming with felling work in the forest or some type of craft. Moreover a large number of these co-operatives belonged to the mixed *kolkhoz* farming and artisan type.

The forest co-operatives proper were either independent and sold the timber they felled to the craft-co-operatives, or they were themselves combined with the craftsmen's co-operatives and felled for their own use, so constituting simply manpower groups.

The exclusive output of all co-operatives at that time was valued at about 1,200 million roubles; felling accounted for 15 percent of this total; timber manufactures 73 percent, and the extraction of resin, distillation products, wood alcohol, etc., 12 percent.

A fairly large number of craftsmen at that time worked in their own homes, but 66 percent of production came from communal workshops. The All-Russian Union was then making great efforts, not only to provide the co-operatives with experts to give technical advice, improve the quality and rate of production and

[5] L. Badré, Population, forêts et travail en montagne, *Revue forestière française*, No. 7, June 1955.

find fresh uses for wood, but also to combat illiteracy and promote the professional training of co-operative members.

The forest co-operatives — regarded from this broad angle — played an important part in the Soviet economy. It is true that they cut only 4 percent of the volume of timber extracted from the forests of the Soviet Union, but they accounted for more than 50 percent of the total furniture production, 75 percent of resin output, and 70 percent of that of wood distillates.

Technical assistance activities

In a survey of the most usual activities of forest co-operatives, one must of course mention technical assistance rendered to members — in general towards attaining as high a level of sustained-yield as possible. This usually involves drawing-up both long- and short-term management plans. Co-operatives which aim at making technical advice available to their members must naturally engage at least one forestry expert on a permanent or temporary basis.

As has already been said, national legislation sometimes imposes a degree of State control over the operations carried out in their forests by private owners. Although in Austria there is, strictly speaking, no such intervention, all owners of over 900 hectares of plains forest or 1,500 hectares of mountain forest are required to engage a qualified forester. Forests of less area, but exceeding 100 hectares, are sometimes managed by a technically qualified person under the direction of a forest officer. But, in the case of forests less than 100 hectares in area, help in regard to management and silvicultural problems is usually given by the provincial Chamber of Agriculture, the organizations having a legal status and being financed by the contributions of all the landed proprietors. Some of these chambers have a special forest service. Hence they really amount to management co-operatives; and their importance may be judged from the fact that 1,400,000 hectares of forest land in Austria — or 44 percent of the total forested area — consists of woodlands under 100 hectares in extent, mostly owned by farmers.

Where the law provides for a measure of State control over private forests, it is normal for forest co-operatives to include the provision of technical aid among their activities; membership in a forest co-operative is the surest way for an owner to know that his forest will be managed in his own best interests and according to the prescriptions of the law.

In Japan, these prescriptions are most strict, because here it is the State itself which prescribes the management of all forests, whatever their system of ownership. The law obviously makes the task more difficult by restoring complete freedom in the constitution and membership of forest associations, and the forest authorities' difficulties are the greater inasmuch as the facilities associations formed under the new law are much more numerous than the production associations that manage their members' forests as a single unit. In fact, the latter type of association has been organized only where, as a result of peculiar historical circumstances, certain forests formerly belonging to part of a parish and supposedly shared among the local inhabitants, had remained under collective management. To deal with this situation, the Government has had to create many fresh posts for State forestry officials and technical officers.

Fire insurance

In regions where damage from fires is serious, the forest co-operative can again render service either in organizing efficient fire-prevention or in minimizing the financial losses of the owner whose forest has suffered.

The efforts of a co-operative can be directed, for instance, towards having firebreaks or trenches cleared or the planting of non-inflammable species around the forest perimeter. These means of protection are usually only really effective if there is an uninterrupted network covering large areas according to a well-conceived and executed plan. There is little hope that a co-operatives' efforts will be on a sufficiently extensive scale unless the State forest authorities co-ordinate the work and give some financial help and technical advice. But it is equally true that forest co-operatives afford the only means, in a heavily-wooded region where there is a large proportion of small private woodlands, of getting such work done quickly, and then kept up properly; or of buying equipment and engaging staff. Since fire-fighting equipment usually benefits not merely the forest owners but also local villages, State help in purchasing is usually provided to the threatened communities rather than to co-operatives.

Finally, there is another activity in connection with forest fires which can usefully be undertaken by forest co-operatives: that is fire insurance.

Insurance against forest fires might well be left to ordinary insurance companies, as commonly happens in some countries and is beginning to happen in others, but it has features which do not, in general, commend it to insurance companies.

The fires which destroyed the maritime pine forests of the French Landes in 1948-49 resulted in enormous losses to the insurance companies, which afterwards fought shy of further fire insurance. The Regional Syndicate of Forest Owners in Southwest France then stepped in to organize a Mutual Fire Insurance Association for Southwestern Foresters.

This association insures only young plantations up to 25 years of age, i.e., during the period when a forest fire would mean an almost total loss; and a policy covers a lump-sum payment of 8,000 francs per hectare to defray the cost of reforestation plus 3,000 francs for

each year of a stand's age, with an automatic percentage reduction if the stand is incomplete.

The association would undoubtedly seem to be running risks unjustified by its resources, the more so as the owners likely to take up insurance are those who have many young plantations, i.e., those who suffered most from the fires of 1948-49, and they cannot afford to pay high premiums, so that these have been fixed at 3 per 1,000, a figure manifestly too low. There are, however, two circumstances which make it possible to run the association. First that it has been able to reinsure profitably with the Central Bank for Agricultural Friendly Societies. Secondly, its resources have been swelled by a generous contribution from the Gascony Landes Provident Fund. What this amounts to is that part of the insurance premiums of the sufferers from the fire is paid by those who were fortunate enough to have their property spared.

This is undoubtedly a good example of professional solidarity but it can hardly be expected to become general. There are clearly difficulties to be faced by co-operatives wishing to undertake such responsibilities. Nevertheless, there are co-operatives of this kind in all the northern Europe countries, although in Sweden they have a purely local importance. But forest fires in these countries are neither so common nor of such magnitude as in North America or Japan.

In Japan, fire causes enormous damage every year, an estimate of the average volume of timber rendered useless annually being 830,000 cubic meters; an average volume of 2 million cubic meters is salvaged in a damaged state.

In order to meet such a situation — especially serious in a land of small private forests — the government authorities have not only taken direct measures for preventing and combating forest fires but have also instituted a scheme of State insurance against fire. An act establishing a special fund for insurance against forest fires was passed in 1937 and amended in 1952. The earlier act limited insurance to stands under 20 years of age of *Cryptomeria japonica* and *Chamaecyparis obtusa*, but the 1952 legislation extended the insurance to cover all man-made forests. The 20-year limit was originally set simply because ordinary insurance companies issued policies for older forests and the Government did not wish to enter into competition with them. These companies, however, suffered severe losses during the last war as the result of which most of them then abandoned this type of insurance, and the others discouraged new applications for insurance. The latest forest legislation provides the possibility that State fire insurance should be open to at least some owners of older age-class forests.

The insurable value is worked out on the basis of species and age of growing stock. Owners can insure for a higher sum if desired. The premium rate varies according to the part of the country, which for this purpose is divided into four regions. The policy can be taken out for from one to twenty years. In the case of a long-term insurance, the premium increases progressively from year to year. If a fire occurs, the damage is assessed by the government department concerned. Appeals against its assessment can be made first to a special committee, and afterwards to a civil court.

Forest co-operatives do not at first sight appear to have any particular part to play in this system. But while the legislation outlined is administered by the Ministry of Agriculture, it is the staff of the local governor which has the responsibility of dealing with the insured parties or with the owners wishing to insure, of conducting the enquiries on which the amount of the insurance and the premium will be based, of collecting premiums and of settling claims for damages if a fire occurs. In practice, the forestry associations are entrusted with a considerable part of this work and collect premiums and pay them into the treasury. It is, therefore, owing to their help that this insurance movement has developed so satisfactorily. It must be added that some dozen private companies are still prepared to issue policies against forest fires, but their business in this field is not very lively.

Other activities of forest co-operatives

There are many other ways in which forest co-operatives usefully serve their members: for instance, by building collective timber yards and storage depots.

Little mention has, however, been made of the co-operatives which grant loans on favorable terms to their members, so enabling them, for instance, themselves to carry out necessary works on their forests, or to avoid the necessity of cutting immature trees to meet urgent or unforeseen expenses. But this is rarely done by specifically forest co-operatives, for an association needs considerable capital to do so. Mention has been made of several French loan funds but these were agricultural funds. In Sweden and in Finland it is chiefly the mixed associations for agriculture and forestry which advance such loans. There is a society in Norway which deals almost exclusively in loans to forest owners but this is exceptional. On the other hand, co-operatives may play a very important part in obtaining loans or subsidies from the State or from banking institutions, and distributing them among their members.

The so-called accessory products of the forest, like cork and resin, may also give rise to the formation of co-operatives. There is, for example, a resin producers' co-operative in Lower Austria which, in 1953, had a membership of nearly 1,400 and which marketed about 3,000 tons of crude resin every year.

In France, also, there is a similar co-operative of somewhat unusual character. This *Union corporative des résineux* has its headquarters in Bordeaux, the trade center for the Landes forests. It is singular because the membership comprises forest owners, resin tappers, manufacturers and processers, and even distributors

and dealers interested in the finished products. It is perhaps a corporation rather than a co-operative.

It includes members of the Syndicate of Southwestern Forest Owners, of the Federation of Southwestern Gum-Producers and Tappers, and of the Resin Traders Syndicate, all represented by a fixed number of delegates to the General Assembly which has 40 members, and on the Board of Governors which has 15. The Union can go to law, negotiate contracts, transfer rights or property, purchase and administer; and exerts the widest control over all its members' operations, from the collection of the crude material to the distribution of the distillation products.

The Union controls the distribution of the resin among the processing plants, acts as arbitrator prior to any legal action being taken in the case of contestations over quantities and qualities, draws up contracts and fixes charges, and stipulates when distillers shall change their methods or equipment in order to modernize manufacturing processes or improve productivity. Apart from dealing with produce from the members' forests, the Union may buy and distribute from State forests, the State receiving the same unit price as members. Finally, the Union fixes the sales prices of distillation products which are marketed exclusively by the "French Society for Distributing Resinous Products," formed under the Union's auspices; and the members of this society are forbidden to carry out any transactions in timber, rosins and turpentine other than on behalf of the member factories of the Union.

Trend towards all-round scope

The activities briefly surveyed may all be independently pursued by different co-operatives but the general trend is towards the single co-operative rendering its members all the services needed for efficient forest management and all the benefits derivable from a co-operative venture.

As an example of wide-ranging activities, quotation may be made from the articles of a Spanish forest co-operative formed in 1948 in *Santa Coloma de Farnes* (Catalonia). The aims of the co-operative are defined as:

"1. The co-operative will inform, direct and advise its members or associates on any regulations concerning forestry matters which are, or shall be, issued by the State, the Province, the municipal authorities, the local forest officers, and any organizations whatsoever whose jurisdiction extends to the region wherein those members' property is situated.

2. The co-operative will assist and promote the development of forestry work in all its aspects, especially as regards prices, wages, transportation and the more efficient placing of forest products on both internal and external markets.

3. The co-operative will advise its members regarding better methods of conserving and using forests, and afford assistance in forest regeneration and in the prevention of damage and disease.

4. The co-operative will protect the common interests of its members *vis-a-vis* all kinds of authorities, organizations, persons or societies.

5. The co-operative will study, report upon and submit to appropriate organs and entities any question directly or indirectly concerned with forestry, especially questions concerning the import and export of timber and rough, finished, or semi-finished forest products.

6. Lastly, the co-operative will exercise any functions or activities entrusted to it by the Board of Directors and the General Assembly with due regard to the relevant official regulations or instructions and to the provisions of the present articles."

Size of the forest co-operatives in relation to scope

An important factor in the success of a forest co-operative movement is delimitation of the actual area to be covered by each association. There are arguments in favor both of the small local co-operative and of the more extended association.

Small or large organizations

The owner of a small woodland is likely to be more attracted towards direct and intimate co-operation with close neighbors whose needs are the same as his and whom he can meet on an equal footing, than to membership in a huge organization in which, despite his voting rights, he may well imagine that his personal problems will receive scant regard. The managers of a small co-operative can be people whom he knows and who are thoroughly acquainted with the local circumstances and needs.

On the other hand, the co-operative which covers only a small locale is usually limited in funds and, without outside help, may find it hard to remain solvent when it tries to undertake the activities which are of most value to its members, and its managers, unless they are particularly dynamic, may find it difficult to keep in touch with market trends and technical developments.

The opposing tendencies both find place today in the United Kingdom. In Wales, where the average area of private woodlands is 12 hectares, the trend seems to be towards the formation of small associations; in Scotland and England, towards large associations. But experience has shown how difficult it is for the headquarters of a big association to keep in touch with individual members and with local conditions, and the

big co-operatives are adopting the policy of forming local groups covering something like 40 square miles in area.

Federations of forest co-operatives

The best method of combining the advantages of both large and small co-operatives is to create federations of co-operatives such as exist in Japan and in those parts of Europe where co-operative forestry has made most progress.

Federations of forestry associations are usually subject to much the same legal rulings as are the associations themselves. Japanese law, however, has a special section reserved to them. These provisions allow federations to pursue somewhat similar activities to ordinary forestry associations but emphasis is laid on those activities which require either bigger capital or a wider territorial scope, such as loan ventures, extension and research.

The structure of federations may, of course, have several stages: small local associations may, for instance, be grouped into district federations, and these latter in their turn may form provincial federations, finally combined into national federations.

A clear differentiation between a federation of associations and a straight association is not always possible. The normal large association may count as members smaller forestry associations as well as individuals or corporate bodies owning woodlands. The way in which associations and federations are formed, and the way their articles are contrived, depends much upon historical accidents. In this connection, it is worth mentioning how the first Austrian forestry associations were formed, and how they grew and federated or otherwise proliferated.

The modern forestry associations of Austria go back to very modest beginnings during the last decade of the nineteenth century when the first farmers' associations were organized to help farmers market their produce. The oldest associations of this type are to be found in Lower Austria where sawmills were established to convert members' timber; one at Pöchlarn in 1899 and another at St. Veit on the Gölsen in 1902. These were not — and still are not — specialized forestry associations but rather farmers' associations branching out also into forestry.

The Union of Provincial Associations in Upper Austria seems to have launched out into timber trading in 1917. In 1918, the Farmers' Association of Zwettl in the thickly wooded northwest, did the same and opened a sawmill.

Immediately after the first world war, increasing demands for timber and consequent higher prices stimulated the formation of new associations. In 1921 the Lower Austria Forest-Owners Trading Board, a limited liability association, was instituted in Vienna, and the Nöwag Forestry Association of Lower Austria was formed there in 1922. Both are still in being. The Trading Board — which has always kept strictly to commercial transactions and has been more successful in this line than any other Austrian association — has, however, created a joint-stock company under the same name, which has taken over all the activities of the association. In the members' opinion, the new form will give greater scope for trading activities.

Up to the second world war, three more trading associations owning sawmills came into being in Lower Austria. The Carinthian Forest Society set up in Klagenfurt in 1936, has since become a Provincial Union; the Little Glödnitz Association of mountain farmers was formed, also in Carinthia, in 1940.

As reconstruction proceeded after the second world war, there was a still stronger impetus to the formation of associations. Three provincial unions were set up: the Alpine Forest Union in Styria in 1946, the Central Forestry Association in Upper Austria in the same year, and the Union of Forestry Associations of the Tyrol in 1949. Further new associations established were three trading associations in Styria, seven in Upper Austria, 18 in the Tyrol and another association of mountain farmers in Carinthia. Finally, in 1949, there was formed the Union of Forestry and Timber Trade Associations covering the whole of Austria and known as *Austroholz*.

The Austrian unions and federations, like the associations themselves, are governed by the 1873 legislation referred to earlier in this paper, and are classed and considered from the legal standpoint as agricultural associations. There are no distinct provisions relating to forestry associations.

At present, *Austroholz* comprises six provincial unions:

1. Alpenholz Union for Styria, with its head office in Graz;
2. Central Forestry Association of Upper Austria, Linz;
3. Union of Forestry Associations of the Tyrol, Innsbruck;
4. Carinthian Forestry Association, Klagenfurt;
5. Union of Forestry Associations for Lower Austria, Vienna;
6. Salzburg Raiffeisen Union, Salzburg.

All these Unions have both individuals and corporate bodies among their members. Included among the 129 members of the *Alpenholz* are seven associations, five collectivities, 98 private forest owners and 15 persons who do not own forests but have interests in timber extraction, manufacture or trading. The big Union of Forestry Associations of the Tyrol has 92 members, comprising 24 associations, 20 collectivities, 38 private individuals, and 10 founder-members. A further analysis of this membership shows that the Union answers to the needs of very different categories of owners. Of the 24 associations, there are 15 forest co-operatives in the strict sense: one forestry society of the type described in Chapter II; two associations engaged

solely in timber trading, and six agrarian communities.[6] The 20 collectivities cover 12 communal forests, 3 forests owned by monasteries, and 5 trade organizations.

Centralization and decentralization

In northern Europe

The formation of federations and their relations with their constituent co-operatives largely depend upon circumstances.

In Finland, the organization of marketing co-operatives is highly centralized, probably because these associations are mainly concerned with the export of roundwood or sawn timber produced by their members. Activities began in the Finnish-speaking part of the country with the formation in 1921 of the *Metsänomistajain Metsäkeskers* (Central Forestry Company of Forest-Owners), which officially took the form of a joint-stock company but worked, in fact, like a co-operative. It set up branches, and although the whole organization suffered some setbacks during the depression in the 'thirties, the expansion preceding the second world war enabled it to consolidate its financial position. After the war it confined itself to its industrial undertakings and passed the buying of timber and selling of manufactured products to the *Metsälüto* (National Federation of Forest-Owners Co-operatives). The two organizations, although basically independent, work in close collaboration, using largely the same staff.

The *Metsälüto* was founded, as an independent organization, in 1941, although similar activities had previously been conducted by a section of the National Farmers' Federation. Those forest owners who wish to profit from its services, join the *Metsälüto* individually and not through the local co-operative. They pay a subscription of 100 Finnish marks per share and buy a certain number of shares, varying considerably in value according to the parish, the average being 370 marks per hectare. The society has an executive committee elected by a board of 19 to 25 directors, themselves appointed by 76 delegates elected from the members of the National Federation which in 1951 numbered 53,000 owners representing a total of 2.5 million hectares of forest land.

This high degree of centralization is, however, mitigated by the *Metsälüto*'s 16 local offices, each supervised by a district committee which keeps in touch with forest owners. Moreover, the *Metsälüto* draws very largely upon the services of the staffs of local forestry societies.

This tendency to restrict themselves to one type of activity is, indeed, characteristic of north European forest co-operative associations, and is especially marked in Finland. Finnish marketing co-operatives may indeed advise their members on forest management but this is mainly the task of the local forestry societies.

The creation of local forestry societies in Finland began in the years just before the first world war, but the movement began to show real vigor only after the 1928 legislation regarding privately-owned forest land. In 1929, there were 86 societies with 4,200 members owning 523,000 hectares of land; by 1945, the number of societies had grown to 305, with 37,000 members covering 3,260,000 hectares. The distribution of these co-operatives and their limited means constituted serious drawbacks, however, and the situation was met in 1950 by the legislation to which reference has earlier been made. They have since regrouped themselves into 18 federations of which three cover the Swedish-speaking part of Finland. By 1952 there were 267 societies with 51,000 members covering 3.7 million hectares. Thus, while the marketing co-operatives are highly concentrated, the technical co-operatives are highly decentralized.

In the Swedish-speaking districts of Finland, there are also private forest districts which are collectives for management and administration covering several parishes, while the forestry society's domain is, as a rule, limited to a single parish. There is a similar society in Sweden itself, the *Skogssällskapet*, established in 1912 which is, in essence, a joint administrative organization for all kinds of forests, especially communal or other publicly-owned forests.

In contrast to the development of their Finnish counterparts, Swedish marketing co-operatives are extremely decentralized: in 1951, there were 30 of them, aggregating 115,700 members owning 6,113,000 hectares, and with a business turnover of 400 million kronor. These societies undertake the delivery of members' timber to mills and factories as well as dealings with export agencies. They can undertake felling, forest extraction and transportation and own a considerable amount of processing equipment; in the same year, they owned 18 frame-sawmills, 65 circular-sawmills, 5 wood-working mills, 7 timber impregnation plants, 23 depots for sawn wood, two factories for prefabricated houses, and 12 fuelwood depots. Their holdings have grown steadily since 1951; and they also own road-building equipment and transportable sawmills which are at the disposal of members.

The associations formed the National Federation of Swedish Forest-Owners' Societies in 1932 which was at first a non-profit organization to promote forest protection, but in 1938 was reorganized as a profit-making society.

Societies specifically designed to assist owners in forest management exist, but are much less common than in Finland. Most of them, fairly long established, are to be found in Bohusland in southwest Sweden, where their main objective was the reforestation of heathlands. There are 12 at present remaining, all small local societies which have not seemingly formed a federation.

[6] Agrarian communities are the Austrian counterpart of the collectives of landed proprietors which owe their origin to special historical circumstances, and which are most developed in the Alps. They were referred to in Chapter III.

There are three big Swedish associations with related aims in forest research, particularly research into forest work science. Set up by big private owners and industrial companies, they have each around 1,000 members and cover 10 million hectares of forest land. The State services themselves have membership in two of them.

Norwegian marketing co-operatives are now mainly engaged in supplying the industrial sawmills, few of which, unlike those in Sweden, own extensive forest properties. Originally the co-operatives, highly decentralized, were concerned mostly with forest management; in 1913 they formed into a nation-wide federation, the Norwegian Association of Forest-Owners' Societies and, in 1929, this federation and all the component societies turned to marketing. They are now remarkably flourishing and play a decisive part in fixing the prices of timber supplies delivered to industry.

The heads of parish groups of woodland owners are local representatives of the marketing co-operatives, and there are no Norwegian societies which specialize only in giving technical assistance. Some of the marketing co-operatives, however, have recently followed Swedish practice in organizing advisory services. We must add that the Norwegian Forestry Society, an association of the type described in Chapter III, engages in activities of great value to forest owners, especially to owners of farm forests. In 1942, the Society embarked upon an evaluation of farm forests and their productivity. The survey provided data on volumes and rate of growth and classified all stands according to age-classes and qualities. In turn, the data were used to formulate ten-year plans for forest management.[7]

In Japan

Co-operatives in Japan tended to give members as wide a variety of services as financial resources, plus State subsidies, permitted. In order to facilitate compulsory timber deliveries during the last war, local federations had to be created. Some had already been formed on a voluntary basis but they now became compulsory; the National Federation of Forestry Associations was readjusted and made the hub of the whole organization.

After the war, the activities of local federations slackened off: not because they became purposeless — for the federations were still responsible for controlling the production and distribution of sawtimber, fuelwood and charcoal — but because headlong inflation and widespread black marketing made it more and more difficult to trade. Finally, the fall in prices in 1949 caused them enormous losses.

Despite this, the Government tried to turn the period to account by seeking to use the federations' strong organization as a vehicle for the very ambitious schemes already described earlier in this essay. Unfortunately these schemes went awry because their cost had been underestimated. Moreover, most of the large owners, being obliged in connection with these schemes to join the associations, tended to take a somewhat passive part. They were discontented at the enforced fellings of the war years and the pressure put upon them at that time to contribute to the financing of the Japanese Sawtimber Control Society and its local branches, para-State organizations, which had a monopoly of the timber trade, and their shares in those organizations had been bought back after the war at a mere fraction of their value.

However, at the time of the negotiations on the new forest legislation and the reorganization of the forest co-operatives, the associations and their federations regained the confidence of their members. They were, in particular, very energetic in presenting the case of the forest owners and looking after their interests. At the time of reorganization, there were 46 federations grouping 4,630 associations; two years later, those figures had risen respectively to 49 and 5,296, the latter including 40 production associations. There were about 1,870,000 members, some 35 percent of the total number of forest owners, holding 10 million hectares or 65 percent of the area of privately-owned forest.

Such a splintering of associations has its disadvantages. An analysis of more than 5,000 co-operatives existing in Japan shows that 1,000 of them are dealing with less than 500 hectares of woodland, and 2,000 with less than 1,000 hectares. The average body is too small to employ permanent workers, much less professional foresters.

These small associations also lack capital as well as manpower. The total capital of the 5,000 associations analyzed amounts to about U.S.$4.7 million, of which only $2 million, or 40 percent, is actually invested. This means that the average capital of an association is less than U.S.$1,000, of which only $411 are paid up. In point of fact, 1,500 associations (or some 30 percent) have less than $280 of capital, and 2,500 less than $560.

Under these circumstances, federation — at least up to country-level — becomes a necessity. Perhaps it is worth taking one such federation and seeing how it works.

The Tachigi Protection Federation combines 73 forest-owners' associations. The total subscriptions amount to U.S.$13,527 divided into 974 shares, of which $11,356 or 84 percent is paid up.

The executive consists of a Managing Director, 13 Directors (3 of them whole-time) 5 Supervisors (2 whole-time) and 38 employees. There are five branch offices throughout the county, and the head office in the county-town comprises four departments as follows:

1. administrative department, with four branches dealing with general business, budget and accountancy, material and transportation;
2. silviculture department, with two branches covering plantations and management;

[7] Arn Eskeland, Agriculture and Forestry - Competition or Coexistence in Norway? *International Journal of Agrarian Affairs*, Vol. II, No. 2, June 1954.

3. forest products department, with two branches for sawtimber and fuelwood respectively;
4. works department, with a branch for anti-erosion works and a branch for road works.

The federation organizes courses on very varied subjects, either administrative (e.g., accounting) or technical (e.g., surveying and mensuration) for the managers of member associations; it organizes study tours; it publishes a news bulletin.

It takes over a considerable number of activities entrusted to the county authorities but which the latter cannot carry out directly. For instance, it has prepared management plans for associations of forest owners in towns and villages. In 1953, it undertook a survey of 353 hectares of land to be afforested: investigated requests for felling permits covering 775 hectares, and carried out a check over 523 hectares to ascertain whether the work of artifical regeneration prescribed and State subsidized had indeed been carried out by the owners; and finally, checked that felling operations over 89 hectares were conducted according to official regulations. In this case, the federation acted both for the county authorities responsible for the enforcement of the regulations, and for the towns and villages which are entitled to taxes on the sale of timber. The federation investigated requests forwarded by the associations for loans to forest owners, and passed on approved loans after deducting a commission of 0.25 percent.

Although the raising of seedlings and the harvesting of seed are really the responsibility of the county authorities, in practice, they hand over part of the work to the federation, which has two nurseries of its own, 6 hectares in extent and tended by two full-time nurserymen. It, moreover, buys seeds and plants from nurserymen's associations and has even obtained the exclusive right to re-sell those products. The number of young plants it distributes is therefore quite large.

The federation buys for resale products from members' woodlands. Thus, in 1953, it sold 1,100 cubic meters of sawtimber to the Ministry of Reconstruction and 1,160 cubic meters of fuelwood and 375 tons of charcoal to various dealers (and incidentally 400,000 packets of mushroom spawn). It also bought felling rights on State or private forests not belonging to members of the federation and cut over 500 cubic meters of roundwood.

On occasion — for such activities are normally carried out rather by individual associations themselves or by the county authorities — the federation also undertakes road building, engineering works to prevent erosion and excessive run-off, and buys and delivers material for works of the same kind carried out by the county authorities, earning a small profit. Transportation is a profitable business for the federation, for it has its own trucks, and the profit from hire in 1953 was nearly $ 6,000.

Finally, the county authorities also hand over to the federation the distribution of State and locally-granted subsidies; in 1953, the federation dealt with subsidies to a value of almost $ 180,000.

For the financial year 1953, the income of the Tachigi Federation was U.S.$245,802, and its outgoings $246,294, resulting in a slight deficit of $492.

Relations with farmers' co-operative organizations

Before leaving the subject, it should again be emphasized that, in most countries, many forest co-operatives are not independent bodies but are connected with farmers' co-operative organizations.

Mention has already been made of a number of activities touching on the forest which are, in fact, exercised by farmers' associations; for example, in Austria it is the Chambers of Agriculture that have practically taken over technical assistance to farmers in the management of their woodlands: in Denmark, where the farmers' co-operative movement is highly developed, the small forest owners have only fairly recently begun to set up specialized forest organizations; even so, these associations are still connected, at the top, with the farmers' associations.

This is quite usual, however, even where the forest is a big economic factor to the small farmer: at the local level there are specialized forest co-operative associations but, at the summit, the federations of these associations are themselves branches of the nationwide farmers' associations.

Thus, in Sweden, the National Federation of Swedish Forest-Owners' Associations is a branch of the Federation of Swedish Farmers' Associations. In Norway, the Norwegian Forest-Owners' Association is, similarly, a branch of the Federation of Farmers' Co-operative Associations, while in Finland, although the big central co-operative for marketing forest products is independent, the parish forestry associations are, on the contrary, grouped into 18 district leagues, themselves belonging to the Central Union of Agricultural Producers which has set up its own internal forestry commitee.

Organized thus, the contact between the forestry and the farming co-operative organizations is efficient and cannot fail to be advantageous. It is, indeed, based on the same considerations that have led most of the developed nations of the world to place their forest services under the authority of Ministers of Agriculture, while allowing them a very broad autonomy compared with the agricultural services proper.

When the merging of farming and forestry co-operatives exists on the more local level, it may have advantages and shortcomings; these are still to be examined. It might, however, be pointed out that such a combination provides a poor solution to the problems of the small forest owners who are not themselves farmers, or — more especially — for the situation where the land is still worked under the tenant-farming or the *metayage* system from which forests are usually exempt. This may be a matter of some importance where a country has a large area of private forests much split up into small holdings.

V. SUCCESS OR FAILURE OF FORESTRY ASSOCIATIONS

The failure of a forestry association after a few years of life may be due to an inner flaw in its organization. The defect may be insufficiency of capital which prevents the undertaking of operations of profit to members, or overheads and interest on borrowed capital which burdens the organization with unproductive expenses right from the start. The fault may lie with inexperienced managers, a lack of proper technical staff or of the kind of able and dynamic individual who is indispensable for the satisfactory working of any collective enterprise.

When, however, it is observed that forest co-operatives flourish in some countries while in others they have to struggle to exist (the countries mentioned so far in these pages barely amount to a score); and when it is noted that, even in countries where the movement is highly developed, the activities of the co-operatives take widely divergent forms, then it may legitimately be asked what are the circumstances external to the organizations themselves that favor or hinder their establishment or assure their success once they are established.

The spread of associations is a characteristic of economic and social development during the last half of the nineteenth and the first half of the twentieth century. Not to mention other forms of association, the co-operative movement has, on the whole, had extraordinary success, particularly in the fields of agriculture — in the widest sense — and of rural industries. They have already achieved much in raising the living standards of rural populations. It is no exaggeration to say that Denmark's prosperity, for example, is largely due to co-operative associations, and it is no matter for surprise that, in 1954, the Economic Affairs Department of the United Nations felt it appropriate to publish a book with the title *Rural Progress through Co-operatives.*

Assuming then that associations are desirable, why do those pertaining to forestry and forest products show such varied development and diverse forms from one country to another? How can the obstacles to their sturdy growth be surmounted?

The strict form of co-operative

The formation of large collectively-owned forest blocks out of small scattered privately-owned woodlands is an operation which nowhere arouses any great enthusiasm. This holds true whatever the form of the association constituted for this purpose, whether it be strictly a jointstock company like the bodies referred to in Chapter II, or a society such as that somewhat arbitrarily called co-operative, like the production co-operative of Chapter IV.

In Chapter II, it has already been said that the law as it stands might not exactly be conducive to forming such associations. Also, the independent spirit often found in peasant communities and especially among owners of woodlands might explain the lack of enthusiasm. This is, in fact, at the bottom of most difficulties and should not lightly be dismissed. An owner's attachment to his woodlands is no isolated phenomenon and one is often surprised to find just how much care is lavished on some properties. The owner who regards his woodland not merely as a financial asset but with family pride, sees its incorporation into an anonymous block as something like confiscation.

There are, of course, other reasons for difficulties in forming forestry associations of the type now under consideration.

The means of development

In the first place, simply grouping a number of privately-owned woodlands together, some or all of which may be in bad condition, does not automatically give a valuable forest estate and prospects of such dividends in cash and kind as to induce the various owners to carry through so fine a project into practice.

A large collective farm created from a number of small privately-owned farms does not necessarily become truly productive unless it receives investments in the shape of labor-saving machinery, buildings, means for transporting products, supervisory staff, and so forth. The same applies to forests, even if in less degree. Modern silviculture — at any rate, in countries where the area of accessible forest is unlikely to change much — is expected to produce more per unit of area, and silvicultural operations, very similar to agricultural techniques, must be applied more frequently. If an extensive forest is to be worked profitably, there must be suitable roads. If an association wants to benefit from the higher returns possible through better methods of cutting, removing the timber to road or rail-head, transporting it to consumer centers and perhaps even carrying out primary processing, then the association must provide modern equipment for felling, extraction and transport, and possibly a fixed or transportable sawmill. In any case, technical surveillance will be needed, and silvicultural and cutting operations must be supervised by properly trained men. In short, capital must be invested in the forests — capital which the woodland owners may not be able to invest or may not wish to because the prospects are not sufficiently tempting.

This difficulty can, no doubt, be overcome by making it easier for small owners to obtain loans on easy terms and especially on long-term repayment, or by a system of subsidies. The grouping of lands for afforestation or reforestation purposes appears to have more chance of success than the consolidation of going forests, because planting is often encouraged by state subsidies

or generous loans. It might be worth considering the extension of this policy to encourage correct management of groups of private woodlands.

Farm Forests

In the second place, a woodland does not always represent a separate entity; in many countries, it usually features as part of a farm, and in those countries — except Japan — where farm forests are commonly spoken of, they are not so small as might be thought. They frequently average 10 to 20 hectares, quite a sizeable area. With fair treatment, a woodland of 10 hectares can easily produce, even with poor soil and climatic conditions, about 30 cubic meters of wood a year which can be sold annually or every two years. It may account for a considerable portion — sometimes the largest portion — of a farmer's income.

Any attempt, therefore, to detach the farm forest from the farm proper would have serious economic and social repercussions. This is true in Austria and certain regions of Germany, like the Black Forest. It may be objected that in other regions the communal forest answers to the same needs as the farm forest — why, then, should not a collective forest do so? But a large collective forest could never cover the same variety of needs. It could not, in any case, represent for the individual farmer a reserve for those financial crises which he knows all too well.

Prospects for a limited development of this form of co-operative

It appears, therefore, that there is little hope of seeing any great development in this method of grouping woodlands. This does not mean that the principle should not be favored in every possible way by legislation — but it should be legislation somewhat like the Danish Acts of 4 April 1909 and 4 October 1919, prohibiting or restraining the splitting up of forest land or else helping heirs to keep it in joint possession.

These are, of course, somewhat negative steps which would prevent future harm without remedying that already done. A more positive policy would be to facilitate the purchase of forest land, especially fragmented forest land, by societies and associations with sufficient capital to develop efficiently the reconstituted forest unit. While it is difficult to set up societies of this kind among woodland-owners, experience shows that it is fairly easy to find an already constituted society or association which can be made interested in the purchase of forest properties. The ideal, of course, is that the body concerned should be disinterested or a professional association like those dealt with in Chapter III, or again an existing forest co-operative. Nevertheless, any other society with capital to invest could fulfill a similar function. Investment in forestry offers a comparative security which will always be attractive where there is little threat to the forest from fire, pests or disease. Moreover standing timber today fetches quite a high price compared with other raw materials, and modern silviculture frequently enables the forest to offer a dividend comparable to that from purely industrial and commercial investments.

It might be advisable, then, to encourage such investments in forestry by special legislation.

There are some circumstances — especially where afforestation with species of rapid growth is concerned — which foster the setting-up of societies or co-operatives in the strict form. In Turkey, for instance, the law recognizes any person afforesting public land as the owner of the planted area. Numerous poplar-planting co-operatives have been organized and enjoy the advantage not only of this legal provision but also of such privileges as exemption from taxes, free supplies of plants, and technical help and advice from the Forest Service. There is, for example, the *Yeşil Yurt Tarim ve Barindirma Kooperatifi Adana-Ceyhan*, with 1,200 members. The association was set up in 1946 and planted 400 hectares of *Populus* x *euramerica* between 1949 and 1950. No member may hold more than one share at a fixed value of 600 Turkish pounds. Large poplar-planting co-operatives of the same type exist in Argentina.

The formation of associations for general purposes or for the protection of professional interests

The formation of non-profit associations for forestry development or for the conservation of natural resources, and associations for the protection of members' professional interests, dealt with in Chapter III, presents few problems.

Associations for the protection of particular professional interests will tend to arise spontaneously. Where their aims are not confined to the strict protection of the members' immediate interests, their encouragement is a matter worth looking into, for it is chiefly through such wider aims that the associations may exert a long-term influence for good upon forest policy.

A powerful and active non-profit forestry association has little chance of formation in a country where the general public is ill-educated in matters concerning the conservation of natural resources — or is, indeed, ill-educated in any sense. People generally must be aware of forest values before individuals will take the trouble to join any such association. Of course, much depends upon the personality and public spirit, the popular and official prestige of those who inspire such associations. But for all this, their efforts may count for nothing in an environment ill-prepared to heed them: at best, the association will only attract the more enlightened classes and, however eminent the members, smallness of numbers may reduce the effectiveness of the association. The mass impact will not be there; and only this can guarantee positive results. Even the moral or financial backing of the State, however justified by the association's aims, will not be effective

by itself. It is indeed the State which must act, but by far less direct means: its task is to educate all classes of the people, to rouse them to an awareness of the importance of conserving the nation's natural resources.

In the same way, the activities of professional associations will have little impact upon the economic and social progress of the country so long as the members do not realize that they have a part to play beyond the bounds of their individual interests or professions.

It is, of course, difficult to expect that highly specialized associations of foresters or of the timber trade with their consequently relatively restricted membership — should engage, say, in research. It is not every association of foresters that can boast a membership approaching that of the Society of American Foresters or of the Association of Japanese Forest Technicians which with more than 12,000 members, can engage in such activities as the management of demonstration forests and research into the uses of aerial photography in making forest inventories. But there is no lack of examples of much smaller professional groups that, while continuing to protect their members' material and immediate interests, can yet contrive to engage in pursuits which are good not only for the future of their profession but for the country as a whole.

Here there enters another important educational aspect — this time chiefly civic education. It should be quite a normal thing for the State to help associations that pursue progressive activities. The State, with its forest research stations and forest products research laboratories, can experiment upon problems submitted by the associations, report the results, and give advice. Where associations undertake research on their own account, they can be given useful guidance in formulating research programs, and their work can be co-ordinated with that of the State. Financial help may be particularly justified where associations organize technical instruction for their members and derive no material profit from such activities.

In short, the State has an important part to play both in encouraging the setting up of non-profit associations able to further the application of efficient forest policy, and in directing the influence exerted by professional associations into useful channels.

Formation of forest co-operatives proper

A people's character as molded by history and environment makes individuals greater or less inclined to unite their efforts in a common aim. History counts for much, there is no doubt, in the development of the co-operative movement in Denmark. The emergence of communal or collective properties in Western Europe and the early formation of co-operative associations in Japan was probably fostered by the need to co-operate in order to overcome the difficulties of life in remote and mountainous regions.

There are three prerequisites to the formation of co-operatives specifically for forestry, obvious yet sometimes forgotten: the existence of small privately-owned woodlands; they must be of some acknowledged value to the owners; and the latter must be aware of that value.

The small privately-owned forest is not to be found all over the world; it is practically restricted to Europe, to the United States of America and a comparatively insignificant area in Canada, and to Japan. Elsewhere, forest land is mainly in public ownership or in the hands of big private owners. The owners of large forest estates rarely feel the need of co-operatives. The forests either bring in sufficient income to pay for their efficient management by trained technicians, and the marketing of products presents no particular difficulties; or, if the forests are difficult of access, their owner either takes little interest in them, and in exploitation, or gets what return he can without regard to their long-term productivity. It is easy to see why forest co-operatives should have made small progress in countries where such conditions obtain. The only forms of co-operative likely to arise are groupings of small contractors or manufacturers, or else — and these are the types most usually found — co-operatives of forest workers or of craftsmen. In many countries, however, tree plantations on private lands are now being developed, and this may conduce in future to co-operatives similar to those discussed in Chapter IV.

Then there are the cases where small private forests certainly exist but have no intrinsic value, at least in their owners' eyes: forests, for instance, which have been degraded or ruined by overfelling. Even if these could be restored by natural means, it might be difficult to convince the owners that the very long-term yields likely to accrue would be worth the trouble of forming an owners' association.

This is not necessarily an insurmountable difficulty. Such has been the situation in the United Kingdom, but intensive propaganda and technical and financial assistance, and the Government's schemes for reconstituting and extending the country's forest resources have resulted in a widespread movement towards planting and woodland rehabilitation. As has already been seen, this has resulted in the formation of co-operatives which, in their turn, have helped the spread of the movement.

But it may also happen that the small woodland, even though reasonably productive, is not cared for by the owner because the property is too small. It has already been pointed out that, even between those countries where small forest properties are a common feature, there are differences in the degree to which the forests are fragmented. Where fragmentation of forest land was already well advanced when the co-operative movement took root, the difficulties in establishing forest co-operatives since are easily understandable.

Japan's example may seem to disprove this, for there forest property is very much split-up while forest co-operatives are highly developed. But two things must be remembered about Japan: first, that the notion of forming co-operatives and associations, even in forestry, is very old in that country; and secondly that the private woodland has remained closely associated with the agricultural smallholding. Small forests in Japan are largely farm forests like the woodlots in northern European countries which are, on the average, much larger than their Japanese counterparts.

In northern Europe, in Austria, and in many parts of Germany, the forest or woodland is regarded by the farmer as an integral part of his farm. Hence the factors making for the formation of forest co-operatives are found together: forest — covering a small area, it is true, but capable of responding to treatment; and owners who are perforce interested in those forests because they must rely upon them to produce a part of their income. Similar situations exist in other areas: in the French Landes, for instance, where forest co-operatives are highly developed although they are rare elsewhere in France. In northern and central European countries, the growth of forest co-operatives has perhaps been further favored by the general prevalence of a spirit of mutual co-operation in all fields.

Forest co-operatives and State control

It may be doubted, however, whether all these factors are yet sufficient. Similar conditions prevail in the United States, yet, with a few exceptions, forest co-operatives in the strict sense do not appear to make great strides.

If we look more closely into the matter, the fact emerges that in all countries where the forest co-operative movement is highly developed, close State control is exercised over privately-owned forest lands. This is particularly true where the greatest development has been in co-operatives supplying technical assistance to their members; and perhaps less so where the co-operatives concentrate mainly on the marketing of timber and produce, even though, as has been pointed out, these types frequently add — and tend increasingly to add — consultative services to their other activities. This is the more strange in that close State control over privately-owned forest land means detailing many officers to the tasks involved and these specialists, in the normal course of their duties, give advice to private owners. But the truth is that, however large the official force of experts, they could not properly fulfill their task without the backing of well-organized forest co-operatives. Hence the latter have, to a greater or less degree, a kind of semi-official function, and a responsibility which, though not set down in any legal clauses, is in fact exercised in practice. So the two conditions which appear to encourage the growth of co-operatives are State control and the partial handing-over of practical responsibility to the co-operatives. This applies at least to the co-operatives for technical assistance which, so far as the application of sound forest policy is concerned, are the most valuable.

To prove this point it will be sufficient to look at the forest legislation dealing with private forest land and the authorities responsible for applying that legislation in those countries to which frequent reference has been made: firstly the northern European countries [8] and secondly Japan.

In Northern Europe

Of the northern European countries, Finland perhaps shows the closest co-ordination among public, private, and semi-private bodies in the implementation of forest policy and the application of the law relating to private forest lands.

The law is strict. Not that management plans are imposed upon the private owner or that pressure is put upon him to fell or not to fell; but the basic principle of the 1928 Act is that no cutting must be carried out which either directly or indirectly (by leaving the land in a bad condition) prevents natural regeneration, and there must be no felling of young vigorous stands, except for systematic thinnings. Every proprietor intending to fell timber for sale or for supply to a mill, must give written notice, except if the cutting is a normal thinning operation or is in pursuance of an officially approved plan. The proposing felling site is then visited by a forestry expert on behalf of the State, and he can prohibit the operation if he thinks it contrary to the law, or he can suggest suitable alternative measures to the owner. The owner can legally disregard this advice, and the forester, after further visits to the site during or after the cutting, can report the case if he considers it necessary. If the results of the felling do indeed constitute abusive cutting according to the law, then the procedure of closure is applied.

This means a partial or total closing of the forest to certain uses (particularly cutting and grazing), accompanied, where necessary, by measures to ensure regeneration. This closure is provisionally ordered through administrative channels and, if possible, a written agreement made with the owner. If he will not agree, the closure is definitely ordered by the judicial authorities which set down the conditions of the closure. If cutting takes place in defiance of a closure order, or if the proprietor fails to notify his intention to fell, then the matter, after examination, is also referred to the judiciary, the owner's rights being safeguarded by a two-stage right of appeal.

The law provides for fines against offenders and the illegally felled timber may be seized and sold, the proceeds being used for the general benefit of private forestry.

[8] FAO: *National forest policies in Europe*, Rome, 1954, and R. E. Marsh: *Public Policy toward Private Forest Land in Sweden, Norway and Finland*, The Charles Lathrop Pack Forestry Foundation, Washington, 1954.

In practice, it is sought to settle matters by agreement and above all by advice, help and financial aid to the owners. None the less this legislation, although it may be imperfect (it is intended to introduce amendments to strengthen some weaknesses) imposes a severe discipline upon forest owners.

Compliance with the law is ensured by the department — the largest one — of the Finnish Forest Service which deals with private forests. This department has a highly complex organization. It rests mainly upon the District Forestry Boards, of which there are 18 throughout the country, two being in the Swedish-speaking area. These bodies are directly responsible for seeing that the law is observed in all private forests, whether they are farm forests, forests owned by industrial companies, or any others. Each Board has three to five members as well as a technical staff, forest officers and assistants; these are employed by the Board and rank as civil servants, for the State covers most of the outlay by the Boards. The members are not appointed by the State, however. One is nominated by the Central Forestry Association (*Tapio*) for each of the 16 Finnish-speaking districts, and by the Central Silvicultural Association for the two Swedish-speaking districts (the part played by these associations will be explained later). The other members are chosen by the local farming associations covering the district. They are usually persons eminent in district farming or political circles, sometimes members of parliament. The members of the Board hold office for three years with the possibility of a further term. They elect their own chairman.

At the parish level, the law provides for local forestry committees each composed of at least three members appointed by the Parish Council. The committee, as a rule, receives and carries out the instructions of the District Forestry Board, although the Parish Council finances the Committee and lays down its internal regulations in consultation with the District Board and after approval by the district governor. Any administrative staff of the District Board working in the parish receive the help and backing of the parish forestry committee.

But as far as the small forest owner is concerned, the parish committees play a small part compared with the parish forestry association to which every owner must belong or which he must at least help to finance. These associations, under management boards elected by members, employ forestry experts; and it is these organizations, set up to help owners to manage their forests, which ultimately put into practice the instructions issued by the District Boards.

For selling his timber, the forest smallholder has also the big marketing co-operatives to call upon: these as a rule, restrict themselves to commercial activities.

The *Tapio* and the Central Silvicultural Association referred to above are two powerful widespread co-operative organizations employing a large, highly-trained forestry staff. Their activities cover many fields: campaigns for efficient methods of forest care, the publication of manuals, seed collection, nursery management and plant distribution, drainage schemes, and so on. But their chief function is to act as a link between the district forestry boards and the Forest Service on the one hand, and the owners and their parish associations on the other.

Thus the co-operative associations on all administrative levels are closely bound together in the application of the law. It is conceivable that so strict a measure would be widely misunderstood and difficult to apply, were it not for the existence of such associations, their close connection with the Forest Service, and their practical responsibility for implementing the law.

Forest legislation relating to private forest lands is equally strict in Norway and Sweden. In Sweden, felling is forbidden — other than for thinning purposes — except in overmature stands. Where the forest is past its prime, it can be cut, but only on two conditions: that felling does not jeopardize the sustained yield of the woodland or of the forest tract to which it belongs, and that it does not render natural or artificial regeneration difficult or impossible. Moreover, the owner must ensure that regeneration does ensue, and he may be compelled by a court ruling to carry out the operations needed for this purpose if he refuses to adopt any measures advised or ordered by the administrative bodies concerned.

Norwegian legislation on private forest land is similar, although the methods of application are perhaps less severe. One clause peculiar to this law is that requiring an owner, after cutting, to deposit in a bank a certain percentage of the sale price of the timber at the place of delivery. The sum deposited is a surety against his carrying out regeneration work on the forest he has cut. A recent measure has extended this surety scheme still further. The deposit on the sale price of the timber, reckoned at a different percentage rate, can be used in investment projects like road building, drainage systems, and housing and shelter for forest workers.

While it cannot be said that the application of Finnish, Norwegian and Swedish legislation depends entirely upon the forestry associations, it must at least be recognized that they are continually implicated, and that the law might well be inapplicable without their help. It may also be surmised that, if this legislation did not exist, the associations would be far less developed or, at any rate, their services to their members would be much less concerned with the practice of good forestry.

While there is no counterpart in Norway and Sweden of the powerful Finnish *Tapio*, the Forest Service, or at least the branch of it dealing with private forest lands, receives the closest support of the forestry associations and co-operatives. In Norway, for instance, this branch of the Forest Service maintains permanent liaison with the Norwegian Forestry Society which groups the county forestry associations, and with the Association of Norwegian Forest Owners. The latter unites the district forest owners' associations which,

in their turn, represent a union of more than 300 parish forestry associations. The Association of Norwegian Forest Owners is itself affiliated to the Norwegian Federation of Co-operative Associations.

County forestry boards in Norway play a similar part to that of the district boards in Finland. The county boards, in their turn, keep in constant contact with the county forestry associations which, moreover, nominate one of the three members of each board. At a lower level there are, finally, the parish forestry committees, in direct contact with the parish forest owners' associations (which also nominate one of a committee's three members), and with the district associations of forest owners.

Japan

Present Japanese legislation relating to private forests is even more constructive, being based upon obligatory management. This is nothing new, but under the old forestry laws, the onus of formulating management plans was left to — or rather imposed upon — the Associations of Forest Owners, a responsibility that may well have had much to do with the development of co-operatives.

Under the 1951 forest legislation, the State is itself, in principle, responsible for management plans, and the complexity of the task involved is obvious in view of the centralization required by the law. In fact, the Ministry of Agriculture has first to divide the whole of the nation's forest land into main sectors each corresponding as far as possible with a river catchment area; and second, to lay down for each sector a basic management plan for the forests as a whole. This basic plan must provide that:

1. there is no clear-felling in young stands;
2. the thinning of young stands, where necessary, is efficiently planned;
3. areas where major felling operations have taken place are reforested within two years;
4. felling is prohibited on forests on steeply-sloping terrain.

The plan must detail:

1. the types of area to be planted, and the methods and species to be used;
2. the cutting methods which must be observed;
3. the roads to be built and other works to be undertaken relating to the transport of forest products;
4. fire-protection measures, and control methods against pests and diseases, to be adopted;
5. all other measures directly connected with forest management.

It is the responsibility of the governor of each prefecture or county to take the basic plan and, in conformity with instructions from the Ministry of Agriculture, to see that the area under his control is divided into appropriate management units, and a five-year working plan drafted for each unit, all privately-owned forest land in the unit being included for the purposes of the plan. The draft is, however, not made definite until all forest owners, their associations, or any other persons affected, have had an opportunity of examining the scheme and stating their objections if any. The working plan specifies:

1. the mininum area to be planted and the methods and species to be used;
2. silvicultural cuttings and improvement works to be carried out;
3. the maximum volume of cut and how it is to be distributed, firstly as between major fellings and thinnings, and secondly as between categories of products (sawtimber, coniferous and deciduous; fuelwood or charcoal, coniferous and deciduous), with due regard to special conditions applying to certain forest types, especially protection forests;
4. felling methods;
5. forest roads to be built and other improvement works relating to the transport of timber;
6. lastly, forest protection measures and their efficient application.

On the basis of this working plan, the governor of the county must every year prescribe for each owner and for each separate property, the specific area to be reforested (with methods and species to be used) and the maximum volume that may be felled, first on areas subject to certain special restrictions and, secondly, on ordinary forest land.

The owners are not obliged to fell a precise volume, but anyone wishing to cut must forward a request to the county governor stating the locality where felling is to be carried out, the expected volume, and the different categories of roundwood which will make up the volume. Strictly speaking, the governor cannot authorize cutting in excess of the prescribed volume in any one year but the law, however, does allow some latitude (about 20 percent) in the case of first thinnings, improvement fellings, and the removal of overmature or overlarge trees.

The law permits an owner the right of appeal if he does not agree with the governor's decisions but the latter, nevertheless, has the final say in everything concerning silvicultural treatment on every private forest. The amount of work involved in all this can easily be imagined. While the owners' associations normally no longer play a part in the planning phases, it is obvious that the plans could not be applied without their help; and several instances have come to notice of their taking over, in practice, certain activities for which the governors are theoretically responsible.

It is too soon to draw any valid conclusions as to the results of the current Japanese forest legislation.

It would certainly seem to encourage the formation of owners' co-operative associations — perhaps in a less degree than previous laws, but still very appreciably.

Necessity for a large technical staff

Obviously the organization and supervision of private forest management in Japan, just as in northern European countries, requires a large cadre of trained personnel of every grade and degree of specialization: for not only must the governmental service be able to enlist the staff to serve directly or indirectly under its orders, but all the various kinds of associations must also be able to obtain the technicians they need to carry out their tasks. A successful private-forest policy — whatever the procedures adopted — requires therefore large trained staffs. The staff dealing with private forest land in northern European countries is in fact large but is still generally considered inadequate in the countries themselves. The number of professional foresters in Japan is even larger.

Should forest co-operatives be separate or merged with farmers' co-operatives

If none of the conditions cited earlier obtain, must private forest owners, and particularly owners of small forests or small landowners wishing to establish tree plantations, forego the benefits afforded by the co-operative?

Not necessarily, but it would certainly be better to renounce insistence on specifically forest co-operatives.

It has already been said that, in many countries, local forest co-operatives are combined at higher levels under the auspices of farmers' co-operative associations, or the national federations of such associations. Forest co-operatives thus gained a wider hearing from the public authorities and enhanced financial strength. But there is no reason why forest co-operatives and farmers' co-operatives should not combine forces down to the local level — that is, merge at that level into a single co-operative which would help the members to manage their forests, sell forest products and help in financial problems, just as it would in regard to agriculture. This would certainly help to reduce overheads, although forestry being a specialized subject such a co-operative would generally have to enlist the help of qualified foresters. Otherwise, it would have to seek close contact with the branch of the official Forest Service dealing with private forest matters.

This kind of merger is found in many of the countries which have so far received little mention because in them the co-operative specifically for forestry is rare if it occurs at all. The co-operative movement in Italy has developed along these lines. The land reclamation Act of 1933 and the 1952 legislation relating to the rehabilitation of mountain lands relied largely upon the formation of co-operatives for implementation: both measures concern foresters — indeed foresters hold the chief responsibility in mountain economy. Obviously, any planting, reforestation and general forest improvement schemes embodied in land reclamation projects do not necessarily call for the constitution of separate forest co-operatives; such work falls within the general scope of the rural co-operative concerned.

Even in those countries frequently mentioned in these pages, the question of choice between the general association and the specialized forestry association has not everywhere been resolved in the same way. The Austrian *Länder* of Carinthia, Upper Austria, Styria and the Tyrol have decided in favor of specialized forestry associations, Lower Austria and Salzburg prefer the generalized association, and it is generally considered in Austria that the merits of the latter outweigh their drawbacks.

An advantage lies in the specialized association in that forest products differ essentially from agricultural products; there are particular processing techniques and distinctive commercial usages; timber has its own market and its own price structure. The farmer who owns a forest usually is quite knowledgeable about price trends for his main farm products, crops and cattle. But he knows little about timber: he sells his wood once a year, if that, and prices are fixed far from his sphere of influence. Moreover he has little experience in forest care.

On the other hand, the specialized forest co-operative has one great drawback — its small capital. Where the co-operative movement is highly developed, the farmer often has to join several associations, each necessitating his paying subscriptions or buying shares. Only an association levying moderate fees has any chance of a fairly large membership. But timber trading calls for large capital investment, because the turnover is slow. Very often a forest trading co-operative will attract no members and get no deliveries of timber unless it can afford to pay comfortable advances. In Austria, where commercial co-operatives flourish, only the *Alpenholz* whose members are almost all big forest owners, has a large capital and its shares cost as much as 400 Austrian schillings. The shares of other co-operatives are very cheap, sometimes as low as 10 schillings, and, therefore, the co-operative must usually depend upon the credit which banks are willing to give them, at interest rates that are sometimes a heavy burden.

Generalized associations are rarely troubled by such problems. In Austria, at least, none of them seems to suffer from lack of capital. The Union of Provincial Associations of Lower Austria, for example, which does a big trade in all goods needed by farmers (fertilizers, farm machinery, seeds, building materials, etc.) accepts timber from its forest-owning members in payment for these goods.

Opinion in Japan tends to favor merging forest co-operatives with farmers' co-operatives even on a local level. The forest owner and the farmer is usually one and the same person and it has been observed that, in 90 percent of forest co-operatives, the great majority of members also belong to a farmers' co-operative.

The specialized forest co-operative is, however, more easily justified where forest property is divorced from farm property — or at least from farming. For instance, where, side by side with small farm holdings of woodlands, there are also forest estates whose owners are affluent enough to ensure that any co-operatives they might form would have sufficient capital to function efficiently.

This again raises the point whether it is desirable to include both small and large forest owners in the same co-operative. Although opinion is divided on this question, the example of Japan seems to prove that the two categories of owners whose problems, if not their interests, are different, are best kept apart. Otherwise the smooth working of a co-operative may be jeopardized.

VI. CONCLUSION: FORESTRY ASSOCIATIONS AND FOREST POLICY

This essay may usefully be concluded by summarizing as follows:

1. in what way the forestry associations of the various types we have examined can assist the formulation and development of forest policies;
2. how they can be used to persuade the owners of public or private forest-land to apply those policies;
3. whether it will pay a government to encourage and facilitate the setting up of such associations.

It must be noted that the different types of association are not equally valuable, for the extent to which they will further the aims of forest policy will depend upon their own particular objectives; an association is not necessarily a panacea for all the problems confronting forest policy; and the most diverse types of associations can equally achieve results in furthering the progress of forest policy.

Comparative values of various types of forestry associations

It is repeated with emphasis that it is probably impossible to give application to an appropriate forest policy in a country where there is not at least one association composed of well-known citizens, and which is, furthermore, capable of creating a nation-wide public opinion in favor of forestry and of the conservation of natural resources in general. Sometimes, it is true, the association in question may itself have somewhat erroneous notions about conservation; but that is a minor drawback, capable of being put right.

Where such associations already exist, they should be helped to grow and extend their activities; where they do not exist, their formation should be encouraged. Of all types of forestry associations, these are undoubtedly the ones which render the most widespread general service: spreading through the nation a real concept of forest values and an acceptance of the need of a certain forbearance whereby those values can be preserved and benefit the largest possible number of citizens.

Nevertheless, a valuable purpose may also be served by more specialized forestry associations, co-operative or otherwise, whose aims are narrower and directed towards satisfying the material interests of their members. These associations all have to some extent a common interest, and their heads have usually the confidence of their members. When, therefore, it is a question of introducing some measure of forest policy considered necessary in the public interest or whose purpose over the long term is not readily discernible to the uninitiated, or when support needs to be obtained for the dissemination of new techniques and ideas in forestry; then the directors of forest policy at government level have no longer to persuade endless individuals, incessantly going over the same ground of argument and persuasion. It suffices to discuss matters with the heads of the associations and come to agreement with them. This advantage is even more evident when the associations are co-operatives and State policy is to grant them loans, subsidies or any form of technical assistance. The administrative formalities required for rendering such aid, and especially for allocating shares (usually entrusted to the association), can be considerably expedited. The association representatives thus become spokesmen for the official forest authorities, and, at the same time are spokesmen to government representatives on behalf of their members.

Well-conceived forest policy depends for its character upon the opportunities open to its promoters for hearing the opinions of those who obtain their living directly or indirectly from the forest. Public interest must, of course, come first; this is, after all, the sum of individual interests, and proper forest conservation and utilization cannot be secured unless due regard is paid to the rights of those who own the forest, care for it, work it, and deal with its products.

On the whole, then, it will also be advantageous for governments to encourage the formation of associations such as these. If, however, it is desired to make them of especial value for the purpose of implementing forest policy, then it must be advisable to channel their activities into suitable directions, which will not automatically be followed either because of lack of initiative or because of short-sightedness in regard to the possibilities for forest development.

It is primarily at the local level that it is important to get a real view of the needs, both long-term and short-term, of forest-owners and users, so that associa-

tions can be formed to serve both their, and the public, interest. A co-operative association dedicated to maintaining reasonable roundwood prices by organizing the sale of members' timber, should arouse interest in a region where fragmentation of forest lands and indifference are the main obstacles to good forestry. Under other circumstances, danger from fire may be a problem, and here priority might be given to co-operatives engaged in fire-insurance, in making and maintaining fire-breaks or buying fire-fighting equipment. In other areas, priority might be given to co-operatives for drainage works, irrigation or tree planting; or to help woodworking industries improve or diversify their output.

From the aspect of social affairs the forest workers' co-operatives are particularly valuable. Co-operatives set up, for instance, in the State of Bombay in India have changed the living standards of the poverty-stricken aboriginal tribes, herded through the ages into the forests and, until almost recently, shamefully exploited by the contractors working State forests. Obviously it is unusual for a government to intervene to this extent in the establishment of associations. Here, however, the intervention seems to have been justified, and constitutes a certain object lesson.

But, side by side with the many advantages of associations, co-operative in form or otherwise, there is no denying that they do entail an element of risk: a risk that an association may become so powerful as to impose its views unilaterally upon forest policy to the detriment of the nation's true interests or of the interests of the forest owners or users who stay outside the association. Simultaneous encouragement of associations representing potentially rival interests is a prudent measure: very often forest policy must strike a balance between divergent interests and all interests should have a hearing.

In this connection, however, it must not be overlooked that where a large proportion of forest land is privately owned the forest proprietors hold a powerful trump card when their interests are at stake. They can influence falling prices or, more frequently, rising prices by diminishing or increasing the volume of fellings. "Freezing" their felling operations may cause them only minor discomfort — in any case nothing comparable with the hurt suffered by sawmills from shortage of supplies, the stoppage of machinery and the laying-off of workers. If the "freezing" were a concerted plan, which could obviously be facilitated by owners' associations, then a nation's timber trade, and perhaps even its over-all economy, might be considerably damaged.

The only safeguard against such an eventuality — which, it must be emphasized, does not nullify the truly great value of all forms of forestry association — lies in public spiritedness. Fortunately, co-operatives and comparable modern developments are nearly always in themselves symptoms of social progress and of a deepening awareness of the individual's responsibility towards the community.

Limitations of forestry associations

The forestry association, with all its virtues, is not a universal cure for all the ills to which forestry is heir. There are limitations where certain problems are concerned.

Perhaps the most important of these problems for most European countries and for North America is the fact that privately-owned forest land is split up into so many small private forests, a term which covers highly varied situations. It is the ill which, above all, may perhaps be cured through the action of associations, especially co-operative associations.

In point of fact, however, the co-operative association can only remedy some of the consequences of fragmentation. It cannot, generally speaking, remove the root cause, and this is unfortunately true in respect to a number of other forestry problems. There are two reasons for this. The first applies to all small owners who try to form groups in order to improve their holdings: they usually have not the capital needed and, even when they join forces, their capital is still inadequate unless they have access to loans on reasonable terms. The second reason applies to the forest in particular: any improvement effected in forest stands usually only yields dividends after a long period. This being so, the probabilities are against the formation of a forest co-operative at all; but even if one is formed, it is very often impossible to run it for long without State aid. The problem is, therefore, not solved by the co-operative alone, but by its acting in collaboration with the State which may either give direct help in the form of loans or subsidies, or may offer tax-exemptions or similar privileges to owners which will induce them to consider forming a co-operative.

There are, of course, exceptions. A co-operative for selling or converting timber may bring immediate returns on capital and redemption may be speedy. This may be the reason for the rapid growth of this kind of co-operative in Europe generally without the need for any governmental intervention. We have seen, however, that there may be difficulties in establishing them.

Various means to the same end

It must not be assumed, however, that a problem is insoluble just because it is impossible to set up a specific form of association in order to help to solve it. The same result might be achieved by another form of association, or by quite different methods applied by associations which are not strictly for forestry purposes.

This is instanced by Swiss attempts to solve the forest-dismemberment problem — not a very urgent problem here, it is true — by the regrouping of lands. The system might seem of little value to other countries, for in practice the operation very often results only in the aggregation of three or four isolated parcels of less than one hectare into a single block not exceeding three

or four hectares. It must be added, however, that the regrouping is followed by the construction of a road network so planned that the reconstituted stands are all assured of convenient outlets to a loading-point. This enables intensive silvicultural treatment to be carried out; and in Switzerland, or at least in some of its regions, a forest of three or four hectares intensively managed is of far from negligible value to its owner. Here the " small forest " problem is solved, at least in part, by a method independent of forestry associations.

The co-operative association formula has achieved much in northern European countries in the way of helping forest owners to practice sound silvicultural methods. On the other hand, in the United States, the forest co-operative movement has made comparatively little progress; yet concerted action by the Federal Government, the States, and private owners, together with campaigns supported by powerful associations, has enabled great strides to be made in fighting forest fires. Mutual fire insurance associations may be lacking, but their place is taken by private companies with progressive policies against losses from forest fires.

There is hardly a forest co-operative, in the strict sense, to be found in the southeastern United States, in spite of the fact that conditions would appear to be especially favorable. But in the area there are — apart from the national organizations which naturally cover this territory — not less than six powerful regional forestry associations and 14 large State forestry associations. All of them provide for giving some assistance to private owners. More than 170 large industrial companies operating and themselves owning forests in the States concerned, employ foresters whom they willingly " lend " to neighboring small forest owners, their prospective customers. Add to this the extension foresters of the Federal Service, the State forest services, and, lastly, the more than 200 private forestry consultants or bodies rendering technical assistance in forestry matters, the latter employing a number of professional foresters; then it is obvious that the region is well equipped for developing its forest wealth.[9]

[9] Third edition of the *Forest Farmers Manual* 1955, a notable publication of the Forest Farmers' Association.

It is true that the results, in terms of better silvicultural practices and felling, do not seem to be altogether consonant with this abundance of facilities, but the forests of this region have only begun to be properly developed since 1920, when the first of the big forest industries began to be set up in the region, and steady progress is being made. It should also be noted that while some States impose some slight restrictions upon the utilization of private forests, no State has adopted forest legislation even remotely comparable with the strict laws in force in northern European countries and Japan. Federal legislation relating to private forests is mainly concerned with organizing joint action by the Federal authorities, the States and the owners for helping the latter.

It should be emphasized that these associations have nothing in common with the co-operative associations as defined in this essay, although the word co-operative often figures in their titles. Perhaps if co-operatives in the strict sense were to develop in the region, quicker progress might result — but there is nothing to prove this. The only thing one can say is that the present system seems to be in keeping with the character and economic standing of the private forest owners in the region.

The part played by the existing associations is clearly highly important and it is very doubtful whether without them there would have been any real improvement in the forest owners' situation.

To summarize, while some kinds of forestry associations are indispensable to the development of national forest policy, others, although not affording a complete solution to most of the problems confronting forest policy, are nevertheless of valuable assistance to those responsible for forest policy. More than that, the formation of such associations should be encouraged, particularly when they encourage useful activities suited to local conditions, for they can also, on occasion, be entrusted with a far-reaching function in the development of forest policy.

Forestry associations, in their most diverse forms, are characteristic of countries which have succeeded in establishing an efficient forest policy. It is to be hoped that they will flourish in those countries which have not yet achieved this end; for they will prove powerful allies to progress.

TIPOGRAFICA CASTALDI - ROMA - 1956

INDUSTRIAL VISION BECOMES REALITY

UNDER this headline, the 16 December 1955 issue of the twenty-four page newspaper *The New Zealand Herald* carried a two-page spread to mark the first time that the paper was printed entirely on newsprint made in New Zealand.

"With it a 30-year-old dream comes to life — the dream of a great newsprint industry based on the softwood resources of the 260,000-acre forest planted on the Kaingaroa Plains in the 1920's and early thirties.

"Few of the people who watched the early plantings of insignis pine on the pumice lands of the Kaingaroa Plains could have foreseen the ultimate use of all the miles of forest — the raw material for one of the biggest forest-utilization plants in the Commonwealth.

"It would have been difficult then to visualize a time when £28 million would be spent to exploit these forest riches, entailing the building of huge modern mills, roads, railways, and a deep-sea port, the organization of highly mechanized logging operations, and the development of two new towns to house several thousand people."

THE Kaingaroa State Forest, from which the newsprint, pulp and sawmills draw their raw materials, is the largest planted forest in the world. A vast belt of pine trees, 15 miles wide and 50 miles deep, it covers 260,000 acres of pumice land which 30 years ago was an uninhabited wilderness of fern and tussock.

It was the discovery, soon after the turn of the century, that the then-despised New Zealand pumice soils could grow a species of pine tree faster than any other softwood in the world that first turned the thoughts of forestry experts to the prospect of establishing a forest big enough to become a source of supply either to the building industry, or a pulp and paper industry, or both.

The facts were fantastic. In 1897 four small experimental plots near Rotorua had been planted with *Pinus radiata* (more widely known in those days as insignis pine, and familiar to Americans as Monterey pine). From 1902 to 1920, some 300 acres were planted every year by prison labor, supplemented in 1917 by the work of returned servicemen of the First World War.

THE trees grew with incredible swiftness reaching maturity in 25 years, whereas in Canada black spruce, the principal newsprint species, took from 80 to 100 years to mature.

It was this discovery, together with the realization that the country's dwindling resources of native timbers had got to be preserved at all costs, that persuaded the Government in 1920 to set up the New Zealand Forest Service. From that moment New Zealand became committed to a scientific tree-growing policy, centered on the vastness of the Kaingaroa Plains.

It was at the Southland Paper Mills in Texas that the final tests of New Zealand radiata for newsprint production were made in 1947: there and at the Australian Newsprint Mills at Boyer, Tasmania.

Newsprint made from these samples of New Zealand woodpulp was used by a number of New Zealand and Australian newspaper publishers with favorable results. All the experts were agreed that the project had high economic promise.

"Today sees the culmination of 30 years of brilliant effort in the creation of a new national industry. In the main we owe its success to the enormous amount of patient research that went into its planning, but above all to what the present Minister of Forests has called 'the imperturbable and unshakeable belief' of the New Zealand Forest Service in its economic feasibility."

Peaceful Uses of Atomic Energy

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE IN GENEVA AUGUST 1955

The United Nations will publish the Proceedings of the Geneva Conference in their entirety. *The English edition will be available early in 1956, other editions* during the same year.*

* Separate English, French, Russian, and Spanish editions will be published; the price of the Russian edition is to be announced, but orders may be submitted now for fulfillment as volumes become available.

The provisional titles for the sixteen volumes are as follows:

I: The World's Requirements for Energy: The Role of Nuclear Power - $8, 57s., 34 Sw.fr.

II: Physics, Research Reactors - $8, 57s., 34 Sw.fr.

III: Power Reactors - $7.50, 54s., 32 Sw.fr.

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